Textile World

ESTABLISHED 1868

CONTENTS DECEMBER 1932

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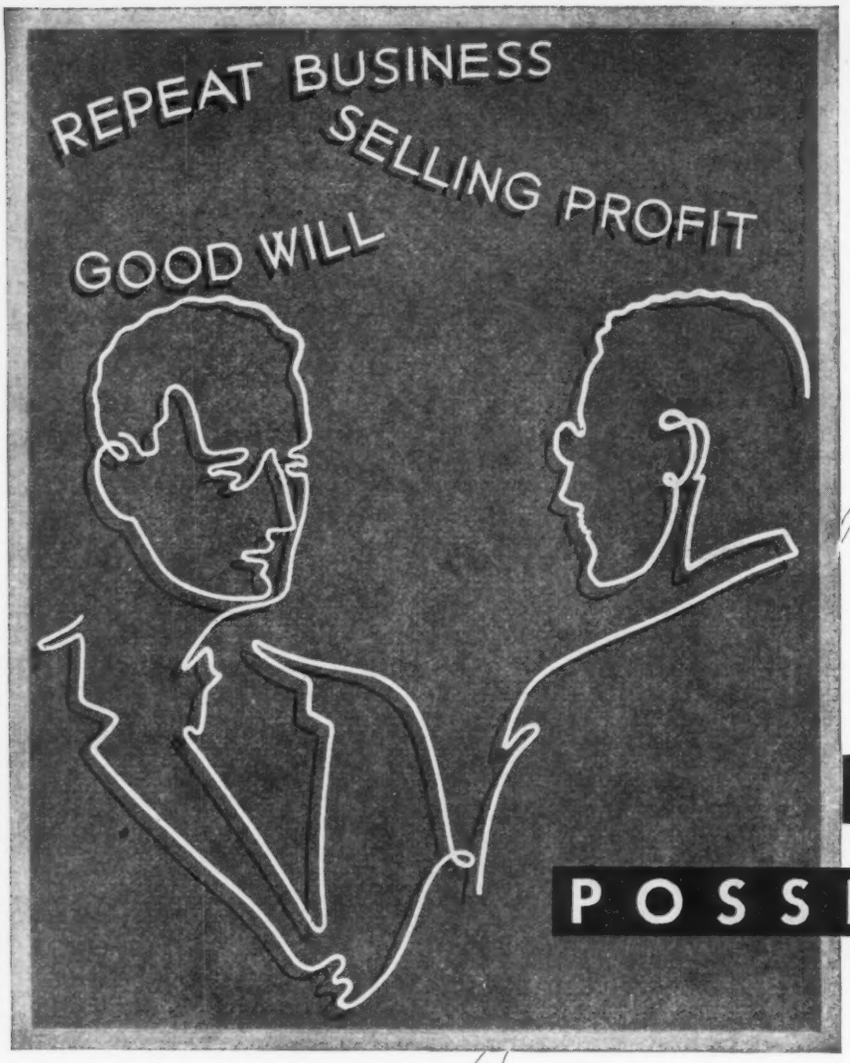
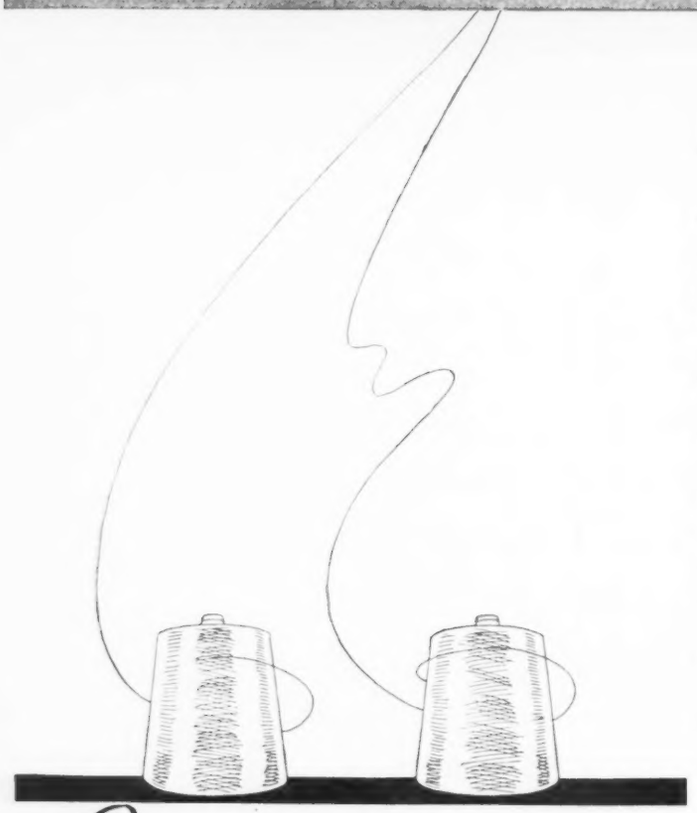


It's the PROFIT POSSIBILITIES *that Count*

AFTER ALL, it's the way your merchandise sells—the approval it receives and the price it brings—that determines the value of the products you use in making it. ◆ ◆ For you are buying yarns only for their *profit possibilities.* ◆ ◆ How important, then, that quality be always thoroughly uniform and dependable! For this reason PREMIER and SPUN-LO are popular with quality-minded textile manufacturers eager to produce products of outstanding sales appeal and win the better markets.



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Editor: DOUGLAS G. WOOLF

A Call to "Gentlemen"!

TEXTILE manufacturers approach the holiday season with mixed emotions. In one sense, they are entitled to a certain amount of celebration. During the last half of the year, they have witnessed one of the most abrupt and spectacular transformations in the history of the industry. From practically complete stagnation, the picture changed almost over night. Prices strengthened, buyers pressed for goods, mills were operated *on orders* at a good rate of capacity.

In a broader sense, however, the outlook offers a challenge rather than a cause for self-congratulation. No textile executive, unless drunk with the admittedly heady wine of this feast which contrasted so sharply with the famine preceding it, can ignore the gap to be bridged before temporary activity becomes permanent prosperity.

▼

Particularly, none can ignore two major problems still unsolved. One of these is the complicated series of management-labor policies involving length of the work-week, night work, and wages—a conglomerate of economic and social considerations.

If there are any textile men who still believe that this whole problem is something to be soft-pedalled until labor troubles threaten, or who believe that it will "straighten itself out somehow," two developments of the last month should disabuse their minds of these beliefs.

The "55-50" and "women and minors" policies of the cotton industry were menaced. Through heroic action, these policies were preserved at the Spartanburg meeting. Still unsolved however is the course of action to be taken by two of the most important groups—print cloths and narrow sheetings—in which the crisis originated and which represent the really crucial battle-ground.

In Boston, notice was served that Massachusetts must lower her labor standards, for her own protection, unless competing States raise their standards accordingly.

The other problem, not only unsolved but apparently untouched, is that of price policy. To most manufacturers, the recent improvement brought little profit—meant little more than an opportunity to run a larger proportion of their equipment and to give employment to a greater number of people. No one should under-rate the temporary advantage of the latter; no one should over-rate its significance for the future.

If revival of demand and strengthening of commodity prices can bring about no material improvement in the profit situation, what is there to look forward to? Of what avail will any expansion be, if, at the first sign of perfectly normal contraction, price-panic sets in?

These observations are made in full realization of the difficulties involved. So long as there is no legal way in which fair competition can be enforced and unfair competition penalized, the complete answer to the questions raised above will not be forthcoming.

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But meanwhile we cannot sit idly by and complain. We cannot ignore the implications of the events of the last month. While men in other industries talk of the need for a 40-hour week, textile manufacturers meet to debate the wisdom of continuing a policy of 55-hours maximum on the day-shift, and 50 at night. While a group of apparently impartial engineers warn that the "price system" in industry is doomed, textile men instead of meeting the challenge furnish confirmatory evidence in the form of price insanity.

The situation demands action. It demands—as we said last month—the immediate thought of every textile association. More than that, it demands the coordinating influence of a group representing the textile industry as a whole, irrespective of divisions or sections.

If we have no weapon except "gentlemen's agreements," it is up to "gentlemen" to take command.

The Editor Says:

AS WE write this, we sense a new stage of discouragement in the making. Men who, a month or two ago, had their chins up, confident of better times in the offing, are now moaning the Business Blues. In financial circles, the dirge takes the form of a glorification of the "June low." Two men out of every three seem confident that we are slipping back to that level; the third man listens dolefully, afraid to deny it. War debts, tariff legislation, or what have you, are advanced as arguments. . . . In industrial circles, the collapse of our economic system is being advanced as a certainty. With that in sight, goes the refrain, why worry about business today or next week? It will be much worse before it's better, say the mourners. . . . Now, we haven't any illusions about the knotty problems still confronting the world. But we can't quite see what the present attitude is going to contribute to their solution. Of course we'll have the "June low" again if we concentrate sufficiently on it. Of course our economic system will collapse if we stop trying to support it. We can only repeat last month's observation: that we can't *afford* to slip back to the low. And we don't see anyone taking on anything he can't afford, nowadays.

❖

EVERY time we attend a New England Council meeting, we come away more deeply impressed with the way this organization works. It could so easily be a ballyhoo movement—a "New England Forever" convulsion. Instead, it's a forum for frank, sincere thought and action on all the major problems affecting that section of the country. . . . We wonder if New Englanders themselves know the respect the Council enjoys throughout the country, or are conscious of the part it has played in enabling New England to weather the storm of the last several years. As a man without any particularly strong sectional ties, without the feeling that the part of the country in which we happened to be born is necessarily "a little bit of Heaven," we nevertheless recognize the constructive work of the New England Council as the type which should help any section, without hurting any other section.

❖

AN INSPIRING example of a contribution by an individual company to a national cause is that recently offered by the Industrial Rayon Corp. In an advertisement placed in the New York *Times* and Chicago *Tribune*, the corporation points out that "the rate at which the speed of recovery can be accelerated will depend very largely on the *attitude* and *action* of thousands of executives in business enterprises throughout the country." One way in which a demonstration of faith can manifest itself on the part of manufacturers, it adds, is "by arranging for plant reconstruction and the replacement of obsolete equipment, not necessarily as a means of increasing output but rather with a view of reducing costs and refining products." . . . On its own part, Industrial announces that, during the last 12 months, it has spent more than $1,000,000 in plant reconstruction and the improvement and refinement of its products; and that "this same policy will be adhered to throughout the coming year."

❖

WE ATTENDED a "Share-the-Work Movement" dinner the other night in a rather skeptical mood. We didn't see how those of us who still had jobs left, at sadly deflated levels, could share them with others. We left the dinner with the conviction that we *have* to. Public charity, employers' contributions and governmental aid have been stretched to the limit. No matter what happens in business this winter, there will be millions of people in need: in need of food, yes, but more in need of even a small amount of work to do. Economists' theories go by the board now; there is a human cry which must be heard. "Share the work" is one answer to that cry.

❖

HAVE you watched a man who has been out of work for a year or two? We have. At first, he exuded confidence. As he became progressively less sure of finding something to do, his shoulders began to sag, his voice lost its confident timbre. A human tragedy was being enacted. He might be you, or I, or any one of the many who still have a job—at a decreased income, to be sure, but still a job. . . . Whether or not it is true that our present economic and social system is threatened, it is also true that real men are facing dissolution. No price is too great to pay for their salvation. We must share our jobs, our hopes and our courage.

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HAVING passed the Santa Claus age, we do not expect to see—under present conditions—an ambitious program of fundamental research financed and initiated by the textile industry during the next year. But here is the way we feel about it: If the type of cooperation now being developed among the U. S. Institute for Textile Research, the Textile Foundation, and other organizations—as reflected at the annual meeting of the Institute—is allowed to peter out without eventual results, then the industry just doesn't deserve a research movement. The preliminary organization job has been done; it is now up to individual manufacturers to support and push the work.

❖

CONSIDER for a moment the "Harriman plan," alias Voluntary Domestic Allotment Act, introduced in the last session of Congress. We wouldn't bother you about this if the plan were not being seriously discussed in the trade. . . . We haven't the space to go into detail but, roughly, the scheme provides for an excise tax, paid at the mill, on every pound of cotton manufactured in the United States. The amount of the tax would represent the difference between the current selling price and the pre-war price level; on the present market, say something like 4½ or 5c. per lb. This tax goes back to the farmer in return for an agreement to cut acreage. That's rather a sketchy description but you get the idea. . . . We thought we were about through with this nonsense; that the Farm Board's suggestion to plough under every third row of cotton was the swan song of our little band of artificial controllers. But here we are again. . . . . Words fail us. Our readers will have to write their own editorial comment.

Night-Work Policy

RE-AFFIRMED BY INSTITUTE

BUT RESPONSIBILITY DECENTRALIZED

THE cotton-textile industry has averted the threatened collapse of the two most constructive policies adopted by it in recent years. Meeting in Spartanburg, S. C., Nov. 15, the directors of the Cotton-Textile Institute re-affirmed their belief in the elimination of night employment of women and minors and in the restriction of maximum hours per week to 55 on the day shift and 50 at night. In addition, they decentralized the responsibility for the night-work policy, placing it upon the several manufacturing groups individually.

The purport and effect of this action are clear. The two groups—print cloths and narrow sheetings—in which support of the "women and minors" policy had fallen below the required percentage, will presumably not observe it for the time being. Other groups, however, are free to continue their observance—and it is hoped that eventually the two groups named above will return to it.

The resolutions adopted by the meeting were as follows:

First—"Resolved, that the board of directors of the Cotton-Textile Institute reaffirms its belief in the wisdom of its policy regarding the elimination of night employment by women and minors, and, resolved further, that the form of co-operation with respect to this matter be decentralized by referring such policy to the several manufacturing groups comprising the cotton textile industry for group consideration, administration and individual voluntary acceptance."

Second—"Resolved, that the board of directors of the Cotton-Textile Institute reaffirms its belief in the wisdom of the shorter work week recommendation commonly known in the industry as the 55-50 policy, and which has had the approval and support of a great majority of the cotton mills in the United States."

George A. Sloan, president of the Institute, in commenting upon the result of the meeting paid a tribute to the spirit manifested by those who attended, and to the unanimity of opinion on these two policies. He expressed the conviction that the industry had a wonderful opportunity to go ahead if it would proceed on a constructive and conservative basis. Pointing to the unusual demand for cotton textiles as contrasted with the lack of demand for most commodities, he said that capitalizing the situation rested with the mill executives.

Kemp P. Lewis, who retired last month as president of the Cotton Manufacturers Association of North Carolina, expressed great pleasure at the result of the meeting. In a statement to TEXTILE WORLD, he said:

"I have a very strong hope that those who have advocated this policy in the past will stand firm in their determination to see it adopted practically unanimously. There have been some defections in the matter, but on sober thought those who are now operating under this plan, because of the great benefit to humanity and to the industry, should, in my opinion, renew their efforts in a whole-hearted way towards the retention of the plan and a broadening in the participation thereof. If the manufacturers should begin now working in a wholesale way women and minors at night, we believe that it would create a very unfavorable impression in the minds of the thoughtful people of our country, and in addition to this would create a tremendous damage to the entire industry through the encouragement of overproduction. We are, therefore, glad to see the directors reiterate their approval of this plan and hope that the participation in it will grow stronger as the days roll by."

◆

IN re-affirming its belief in the policy of elimination of night employment of women and minors, the cotton textile industry has retained its claim upon public confidence. Recent violations of the policy within two specific groups had menaced its retention by the industry as a whole. In the face of such a menace, directors of the Cotton-Textile Institute wisely decided to decentralize the responsibility. In this way, should one or more groups fail to observe this constructive program, the industry would not be forced to retreat from its stand; also, the way is made clear for eventual resumption of the policy by any groups which temporarily fail to observe it. . . . No single step ever taken by the industry has gained for it greater public prestige than this move to eliminate night work for women and minors. Furthermore, the observance of the policy for nearly two years has created within the industry a consciousness of progressive accomplishment. By refusing to yield these invaluable assets, manufacturers have reasserted their belief in constructive cooperation as opposed to unbridled and destructive individualism.—*Editor.*

Underwood & Underwood

Howard E. Coffin

HEADS GENERAL TEXTILES, INC., WHICH SUCCEEDS HUNTER COMPANY

PLANS for the "orderly liquidation" of Hunter Mfg. & Commission Co., the formation of General Textiles, Inc., to sell the product of the mills now represented by Hunter, and the selection of Howard E. Coffin to head the new company, comprise one of the most important and significant steps taken by a textile company in recent years.

The announcement of this news lifted from the market the uncertainty regarding the future of the Hunter company which had acted as a retarding influence. More than that, it represented an attempt to set up a community of interest among the mills represented by General Textiles, Inc., since they themselves will own and control the selling organization. Finally, it marked the entrance of a nationally known industrialist and engineer into the textile industry.

Details of the plan as outlined by Donald Comer, president of Hunter Mfg. & Commission Co., follow:

"This plan provides for an orderly liquidation of the present company and the incorporation of a new company with adequate capital largely furnished by the mills. This capital will be represented by preferred stock and Class A stock which will control the corporation. The stockholders of the Hunter Mfg. & Commission Co. may subscribe to Class B stock in an amount equal to the number of shares held in the old company. Class B stock will be sold at the same price as Class A and will have equal rights of participating in dividends and liquidation.

"It was stated at the meeting that when the plan becomes operative the new company would be organized and engaged in business similar to that of the Hunter company. Opportunity will be given to other than the present mills now selling through the Hunter Mfg. & Commission Co. to acquire an interest.

"The success of the new corporation will be assured by the strong interests participating and by the fact that Howard E. Coffin has consented to become its executive head. The directors stated that they believed that the new company under the leadership of such a man as Mr. Coffin would not only furnish one of the best mediums for the sale of mill products but a prospect for better merchandising and consequent benefit to the whole cotton industry."

Mr. Coffin is one of the best known engineers and industrialists in America. He has been a pioneer in both the motor car and aeronautical industries and has served the nation during critical periods under both Republican and Democratic Presidents. He was appointed by President Wilson a member of the Naval Consulting Board and a member of the Advisory Commission of the Council of National Defense. He was also a member of the American Aviation Mission visiting all allied countries following the World War armistice for the formulation of our national policy for aviation development. He was appointed by President Coolidge a member of the Morrow Board which in 1925 developed the "five year program" and laid the foundation which has made possible our country's advance to its present leading world position in commercial air transportation. He was the founder and first president of the National Aeronautic Association.

As president of the Society of Automotive Engineers he initiated the engineering practices and standards which have made possible the great quantity production of the low-priced automobile. He first suggested and later served in effecting the famous cross-licensing agreement under which 24,000,000 motor cars valued at $27,000,000,000 have been made without a single patent suit between manufacturers.

He was for 20 years vice-president and consulting engineer of the Hudson Motor Car Co.; and was an organizer of the country's first comprehensive effort in commercial aviation—National Air Transport, Inc.—serving two years as president and two years as chairman of its board.

He is now chairman of the board of the Sea Island Co. of Georgia and a director of the Guardian and Industrial Banks of Detroit; a director also of North American Aviation, owners of the Eastern Air Transport line serving the textile territory of the Southeast.

It was concerning Mr. Coffin's work in the initiation and direction of the Naval Board's industrial preparedness inventory of 1916 that Newton D. Baker, then Secretary of War, said in a public speech: "And so they appointed a committee of which Mr. Howard Coffin is chairman, a man who has done perhaps the greatest service for this country that has been done by any private citizen in the last 50 years."

That any group of American industrialists, holding in their hands not only their own financial prosperity but the future of a great industry and the welfare of millions of employees and those other millions dependent upon them, should now throw into the discard those principles of cooperative effort, so essential to constructive accomplishment, and deliberately revert to that primitive law of the survival of the fittest, is unthinkable.

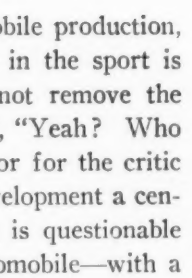
—From Mr. Coffin's address at Cotton Textile Institute meeting

An Automobile Man

LOOKS AT THE TEXTILE INDUSTRY

By Paul R. Collier

It is not a new sport to compare textile manufacture with automobile production, to the discredit of the former. But in this case, the participant in the sport is an ex-textile man. . . . This fact in itself, however, does not remove the article from the controversial class. It is fair game for the man who may remark, "Yeah? Who said the automobile industry is any better off today than the textile industry?"—or for the critic who may point out that textiles went through their major stage of inventive development a century before the automobile was born—or for the logician who argues that there is questionable justice in comparing a machine actually employed by the public—such as the automobile—with a machine which merely produces an article employed by the public—such as the loom. . . . But this thought arises: Power manufacture of textiles has represented, in the main, an attempt to perform mechanically the same processes that had been done by hand before, rather than to think of the raw material and of the ultimate product and to attempt to take the most direct and most efficient route from the one to the other. If there is anything in this thought, then a study of an industry whose "route" has been compressed within a relatively few years of development might be profitable.—*Editor.*



A WOOLEN manufacturer will immediately ask, "What does an automobile man know about woolen manufacturing?" The writer is an ex-woolen man—one that left the woolen mills to work with motor cars.

The writer was, figuratively speaking, born and raised in a woolen mill. As the son of a successful manufacturer, the combined experience of over 50 years is behind this vivid contrast between an old and a new manufacturing enterprise.

The manufacture of cloth dates back through centuries to the crude, prehistoric fabrics of primitive man. The automobile was only a dream at the ending of the nineteenth century. Today the motor car is an example of engineering triumph. What about textiles and their construction? Have they kept pace?

Loom a Crude Device

The writer's first mill job was that of learning to weave. It was on an old Crompton loom weaving cotton-warp cloakings. It is admitted that more than one "smash" was caused by the mistakes of a "green" weaver. The greatest number of smashes, however, resulted from mechanical failure within the loom itself. The vibration of the loom caused that machine to lose its adjustment, with devastating results.

In later years of the writer's apprenticeship, considerable time was spent fixing looms. The tools and methods of the loomfixer are today as crude as the horseless carriage. Not only are the tools crude, but the machine itself is not a truly modern mechanical triumph.

The loom is but one of a large number of crude mechanical devices in use in mills today. Some mills are equipped with the latest in woolen machinery and there are also many mills using machinery that dates back nearly to the civil war. How can one expect to compete today with such equipment? What has happened to an industry which is one of the oldest and largest enterprises in existence?

Foreign goods are sold in this country as superior merchandise, while those of us who know cloth are convinced that we Americans can produce as good textile fabrics as any people in the world. With the resources behind us, why do we not produce cloth that is superior to foreign competition?

Automobiles and dyestuffs are two American industries which show what Americans can do to foreign competition. After paying high wages, these two industries not only supply almost all of the American demand but they export a good proportion of their products to foreign nations as well.

Unrelenting Research Needed

Of all the industries of modern times, woolen manufacturing conducts the least research. Research must be constant and unrelenting if any industry is to survive. The results of that research must be passed on so that the entire industry will benefit.

One of the principal reasons for the rapid development of the motor car has been the exchange of improvements. If the car builders retained their patents exclu-

sively, there would not be a single modern car today. One car would have a powerful motor, a second would have a smooth clutch, a third would have a self-starter, and a fourth would have good brakes. What difficulties a motor-car merchant would have under such circumstances!

Research in woolens must be carried on in every branch of this wide field. The sheep is a cultivated animal. Wool reverts to hair if the sheep is permitted to return to its original life. It is not impossible that sheep may be raised in America that will yield wool fibers of the type now imported. Some advances have been made in scouring and dyeing wool, but research must not be slackened.

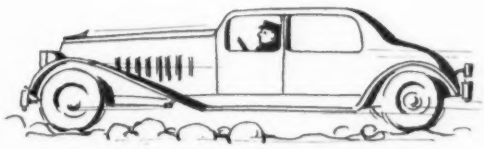
Dusters, pickers, and cards are far from being modern, even considering such improvements to cards within a few score years as the broad-band intermediate feed and the tape condenser.

How many carders know positively the exact number of revolutions the various parts of a card should turn? The speed of the cylinder, workers, strippers, fancy, and doffer must all have a definite ratio to each other, if the machine is to produce rovings efficiently. What horsepower is required to run a certain card? Does it operate freely? Why do the stripper bearings get hot? What materials and types of bearings should be used to obtain the least friction and heat? The oil-can system of lubrication is not only dangerous, but also wasteful.

The loom is a machine on which accurate time is essential, yet vibration is allowed to cause no end of trouble. Does it seem reasonable that vibration need be so terrific? The very principle of beating the pick with the lay induces vibration, but that is not the source of the most violent motion. Vibration can be reduced in the loom by balancing the rotating and reciprocating parts. Just because the reed hits the fabric with considerable force, there is no reason why other parts of the machine must also help to beat the loom to pieces. There are many places where friction can be reduced. Everyone admits that friction costs money. Must the old picker ball and picker stick remain as an inefficient obstacle that our generation could not conquer?

The automobile takes a terrific beating on rough roads at high speeds. If an automobile were constructed like a loom it would be like a locomotive—in the round house after every run.

"Does it seem reasonable that vibration need be so terrific? Vibration can be reduced by balancing rotating and reciprocating parts. Just because the reed hits the fabric with considerable force, there is no reason why other parts of the machine must also help to beat the loom to pieces."



"The Automobile takes a terrific beating on rough roads at high speeds. If an automobile were constructed like a loom it would be like a locomotive — in the round-house after every run."

Merchandising Research

Finishing and merchandising methods need research as well. The machinery is but one phase of our trouble. How can we produce cloth in America to beat foreign competition? Tariff? That will help only temporarily. A new administration can ruin the work of years by a short low-tariff period. Fabrics would be shipped here for sale after the higher tariff returned.

Two things are needed to put over American fabrics in America. First the native here must be convinced that he buys better goods when he buys American goods. Secondly he must purchase at lower prices. These can both be accomplished by organization.

An organization interested in all phases of wool from the sheep to the consumer must be formed. This organization must be able to conduct intensive research in all branches. The research costs would be cut when handled on a large scale. Better wool must be developed, better machinery and methods must be devised, advertising must be centered on a definite product, and sales must be organized.

The largest builder of motor cars is a well-known corporation which constructs practically all parts of the car and merchandises it through its own organization, even to the point of financing the purchaser.

A large organization made up of well-known manufacturers could develop the woolen business to a point where it would once again be a leading industry. This organization could be gradually taking in manufacturers of practically everything that makes up woolen clothing.

It could have direct connections with large wool growers, obtaining the fiber desired when needed. The machinery builders would bring constant developments to the manufacturers as designed by the research department. That would prevent new machines from being built before they were made practical.

The cloth must be made up before it can be consumed as apparel. The organization should include well-known cloak and suit tailors and the manufacturers of linings, paddings, etc.

The product of such an organization could be sold nationally and advertised and retailed as any other known product. The organization could sell under several brands, all labeled as its products.

All members would retain their identity and would purchase from each other at prices determined from costs by the parent corporation. Should a competing combine be able to offer the fabrics to the tailors for less, the research department must determine the reason and recommend required improvements. Sales must be maintained by advertising merits of particular products.

Anti-trust laws are being revised. A large textile organization would be no greater trust than a large motor concern. What have such combines brought us in the motor world? Better cars at prices within the reach of the majority.

Textile Chemists

CONSIDER BLEACHING, DYEING, AND PRINTING PROBLEMS AT ANNUAL MEETING

DISCUSSION of improved technique in bleaching, dyeing, and printing; the election of officers; and addresses by W. S. Lee, vice-president, Duke Power Co., and Dr. Frank P. Graham, president of University of North Carolina, were high points of the twelfth annual meeting of the American Association of Textile Chemists and Colorists. Some 250 members and guests of the society attended the various sessions which were held on Dec. 3 and 4 in the Hotel King Cotton, Greensboro, N. C. Also of particular interest were the visits made on Friday afternoon to the White Oak Cotton Mills and the Proximity Print Works.

Dr. Robert E. Rose, director of technical laboratory, E. I. du Pont de Nemours & Co., Inc., was elected president of the association to succeed P. J. Wood, of the Apex-Oriental Corp. Officers reelected were: W. H. Cady, of the U. S. Finishing Co., and Alex Morrison, of the American Woolen Co., vice-presidents; A. Newton Graves, Franklin Process Co., secretary. Other officers named were: William R. Moorehouse, National Aniline & Chemical Co., treasurer; Hugh Christison, of American Woolen Co., and William D. Appel, chief, textile section, U. S. Bureau of Standards, councillors for three-year terms; and Carl Z. Draves, of Ludlow Mfg. Associates, councillor for two years to fill the unexpired term of the new treasurer.

Technical Discussions

D. A. Gryder, of Holt Plaid Mills, the first speaker at the Friday evening session, took as his subject "Color Fastness Problems in the Dyehouse." After outlining briefly the progress made in recent years in the manufacture and application of fast dyes, Mr. Gryder pointed out the factors, such as depth of shade, color combinations, and nature of textile being processed, which influence the fastness of shades. He then cited the need for consumer education on the fastness properties of dyed and printed fabrics, and advocated the selling of draperies and other materials in which fastness to light is a prerequisite on the basis of light-fast hours as determined by the Fade-Ometer.

A routine which he has found satisfactory for bleaching cotton piece goods with 100-volume hydrogen peroxide was described by C. L. Eddy, of Renfrew Bleachery. The procedure suggested by Mr. Eddy is as follows: Sour the goods at the singer at full width; pile in bin or J-box; wash; saturate with caustic soda solution; pile in kier using automatic piler to insure uniform plaiting; boil for 10 hr. at 10- to 18-lb. pressure in pump-and-heater kier with added circulation system; blow off; wash 30 min.; saturate fabric with water at 110 to 120° F.; add peroxide previously diluted to proper strength and neutralized with sodium silicate; raise temperature to 190° F.; bleach at 180 to 195° F. for 1½ hr.; wash in kier for 30 min. with hot water if available, otherwise with cold; wash with hot water in rope washer into white bins.

Variables in ageing vat prints and their effect on color yield were discussed by Dr. R. E. Rupp, of Pacific Mills. In the experiments made by his company to determine the influence of changes in pressure, temperature, and concentration of gases other than steam, it was found that the small pressure variations encountered in ageing had no effects. On the other hand, if air was present in the ager, the color yield with the dyestuffs employed in the investigation was reduced as much as 25%. It was shown also that increasing the temperature decreased the color yield, slight differences in temperatures between 212 and 218° F. making big differences in the yield. Best results in vat ageing, according to Dr. Rupp, are obtained at about 213° F. Due to the release of latent heat when the steam vapor condenses in or on the fabric much higher temperatures usually prevail in vat ageing. To maintain a low temperature various expedients have been tried, such as increasing the flow of steam, sprinkling the goods with water, and running wet blankets in the ager. Further work is needed, however, on this problem.

A talk on the subject "Predetermined Shrinkage in Sanforizing," by H. D. Clayton, of Cluett, Peabody & Co., Inc., was accompanied by motion pictures which showed in detail the methods and equipment employed in the improved Sanforizing process for producing preshrunk fabrics. Mr. Clayton traced the growth of this process, which is now being carried out in about 20 finishing plants in this country.

Finishing-Plant Costs

The importance of normal costs in correcting plant inefficiency was stressed by A. D. Robison, Union Bleachery, the first speaker at the Saturday morning technical session. Mr. Robison pointed out first the fallacy of figuring finishing-plant costs on any basis other than that of distribution of overhead burden over a long-time period of normal running. He then described a wage-incentive system for operatives and overseers which had added greatly to the efficiency of his plant, had added to the earnings of the operatives, and had effected savings in costs. The plan briefly is to analyze the efficiency of each machine in the plant, adopt standards of performance, and to pay a bonus weekly in each department to the three workers whose production records were the best. In addition, the efficiency of each department, without allowance for stoppages, is determined. When the production of a given department exceeds 80%, the overseer is paid a bonus, the amount increasing as the efficiency obtained approaches 100%. To counteract any tendency to speed up production at the expense of quality, a third bonus, based on the percentage of returns and seconds for the entire plant, is paid.

Sample of the various types and grades of sodium silicate used in textile processing were shown by Dr. William Sterricker, of Philadelphia Quartz Co. Dr. Sterricker then spoke of the several uses of these products in the textile industry and indicated the types and grades which are best adapted to a number of particular processes. A clear, purified product, free from iron or other metals, appears preferable in peroxide bleaching.

Soap Substitutes

Properties of the sulphonated fatty alcohols, recently developed compounds known as the Gardinols and the Brilliant Avirols, were shown in an illustrated paper delivered by Dr. Samuel Lenher, of E. I. du Pont de Nemours & Co., Inc. Among the important features of the products are: they do not hydrolize, they can be employed in acid or alkaline solutions or those containing salts of heavy metals, they reduce the surface tension of water, and form a colloidal solution with pronounced detergent action. These properties, according to the speaker, make the sulphonated fatty alcohols of interest as general substitutes for soaps, and open up many possibilities where soaps cannot be used. Further, certain of these compounds possess wax-like characteristics which make them valuable as finishing agents.

Two new tools for the textile chemist—microanalysis and spot analysis—were described by H. M. Chase, Riverside & Dan River Cotton Mills. Microanalysis enables the detection of traces of heavy metals and other impurities in cotton fabrics when these are present in amounts as small as 1 microgram (0.000001 gram). Spot analysis, too, enables similar determinations and has the added advantage that no microscopical equipment is required. Mr. Chase urged other chemists to investigate these analytical methods for testing cloth to be rubberized, for checking defects, and other purposes.

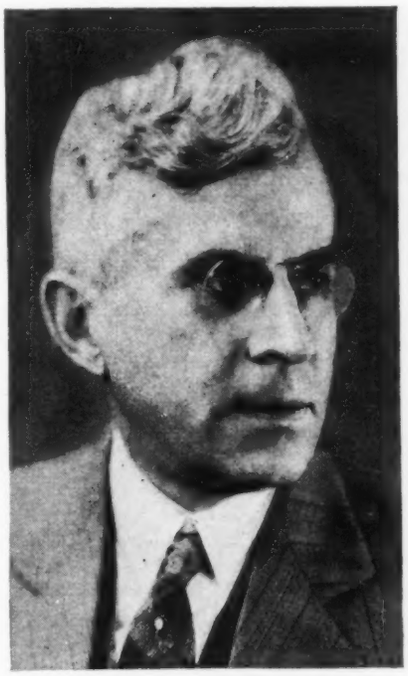
Latest Researches

At the business meeting which followed the presentation of Mr. Chase's paper, reports of the secretary and treasurer were read; names of officers who were elected were made known; and action was taken on several proposed amendments to the society's constitution. Dr. Louis Olney, of Lowell Textile Institute, chairman of the research committee, commented on the work of the several sub-committees and of the association's research associates. One of the most recent investigations undertaken by the society is the development of a laboratory method for testing the fastness to fulling of dyed wool. Such a method was devised by Bertil A. Ryberg, research associate of the organization. This test makes use of the Launder-Ometer, and is said to give reliable and readily duplicable results. Work on sulphonated-oil analysis continues, and a new method for the determination of moisture in sulphonated oils has been proposed.

W. C. Smith, research associate of the A.A.T.C.C., the first speaker at the afternoon session, described a method of testing the waterproofness of fabrics which was developed at the U. S. Bureau of Standards and then discussed the adaptation of this procedure to the determination of the effect of ageing on waterproofed duck and similar fabrics. He has found that by subjecting waterproofed fabrics to the action of a carbon-arc lamp for 45 hr. and subsequently to a mechanical ageing treatment, he is able to simulate the results of exposure to weather for a period of several months.

Another research associate, Dr. Milton Harris, presented a paper giving the results of his study of the iso-electric point of wool and its application to practical problems. His investigations have shown the iso-electric point to be at pH 3.4. Recognition of this fact is believed to make possible the development of improved methods of wool scouring, carbonizing, and dyeing.

Three historical papers followed Dr. Harris's address. Dr. Rose described the work of the chemist in evolving new and better dyestuffs, and showed how it is possible from one comparatively simple compound to build up a large number of more complex molecules. Prof. J. E. Copenhaver, University of South Carolina, gave a sketch of the culture of indigo in the south from early colonial days to about the time of the Civil War, when cultivation was discontinued. J. E. Hardin, of Proximity Mfg. Co., in a paper entitled "Textile Reminiscences," traced the growth of the textile industry from the dawn of civilization to the present time. Today, it was stated by Mr. Hardin, in some sections of the country, lack of cooperation between owners, employees, and the state governments has almost ruined this industry. Greater cooperation and more research are needed that we may carry on, he said.



Dr. Robt. E. Rose, new president A.A.T.C.C.

Due to the absence of the authors, papers prepared by J. A. Andrew Clark, of Dutchess Bleachery, on "Re-Handling Costs of Cotton Piece Goods," and by Dr. H. D. W. Smith, A. M. Tenney Associates, on "Physical-Chemical Aspects of Cellulose and Rayon," were presented by title only. Dr. Olney read a short abstract of a paper on "Mercerization of Cotton for Strength," which had been written by W. D. Appel, of the U. S. Bureau of Standards. Prof. A. H. Grimshaw, North Carolina State College, the final speaker at the technical session, took as his topic "Students of Today, the Textile Dyers of Tomorrow."

The formal banquet, which was held in the ball room of the hotel, brought to a close this twelfth annual meeting of the society. Arthur Thompson, Jr., of North Carolina Finishing Co., and chairman of the Piedmont section acted as toastmaster. Mr. Lee, in his address, denounced excessive taxation as one of the major causes of the present economic condition of the country and urged that the Carolinas employ the energy of their college-trained young men and women to help straighten out this condition and to create greater opportunities. Dr. Graham offered the thought that the scientifically trained textile man should look at his industry in world terms. What is needed is to work out a social mastery of our great industrial machine. Short addresses were made also by J. E. Latham, president, Pomona Mills, Inc., P. J. Wood, retiring president and Dr. Rose, newly elected president.

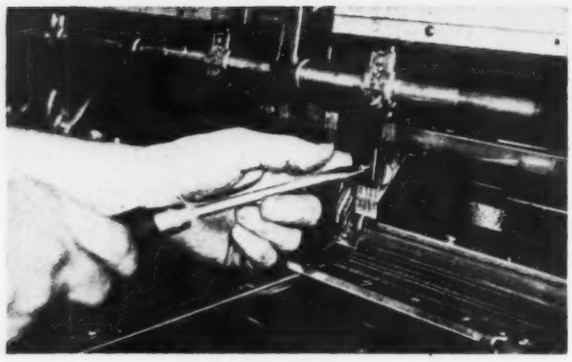


Fig. 1. Hold the finger in back when tightening clamp on narrowing comb

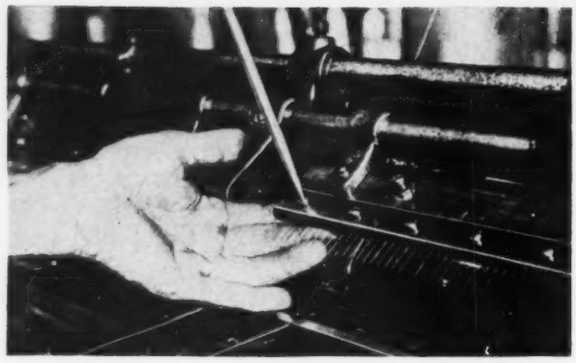


Fig. 2. Correct way to tighten plate on picot bar after new points have been inserted

Full-Fashioned Defects

AVOIDED WITH ONLY TEMPORARY BURDEN ON SUPERVISORS

By Albert E. Parker
Educational Instructor,
Ajax Hosiery Mills, Phoenixville, Pa.

◆ *There are many hosiery defects caused by faulty operation of the machines which it should properly be the responsibility of the knitters themselves to eliminate. If the heads of knitting departments will occasionally take the time to instruct their knitters carefully with this end in view, they will eventually find a great burden lifted off their shoulders. What some of these defects are and how they should be remedied are explained in this article.*

IN THE production of full-fashioned silk hosiery two things are vitally necessary from the viewpoint of the superintendent or the foreman of the knitting department. First, it is essential to keep the machines constantly in such condition as to secure a good volume of production from them. Second, the merchandise that is obtained from these machines must be of the highest quality possible, with the minimum of defects.

In order to attain these goals, the watchword should be "Ever on the alert"—and should apply not only to the heads of the knitting department, but to each and every knitter as well.

Years ago, when soft cotton yarn was used in making full-fashioned stockings, it became second nature for a knitter never to look away from his machine for more than a few seconds at a time. Press-offs were many, due to the lint stopping up the carriers. In a few courses the yarn would often catch in again and pile up on the needles, very soon causing a smash. This is just as important today as it was then, and the knitter should be taught to acquire this habit of continually looking across the machine. It will save a lot of time and trouble.

The efficient knitter should always have a supply of straight needles on hand and should by all means be careful not to let broken needles fall down between the needle plate and the needle bar. Often bad narrowings and cuts in the fabric are caused by this. When the needle plate is tightened these butts or stems change the pitch of the needle plate, allowing contact with the needles only at the top of the plate, which is not enough to hold the needles firm.

When starting the set on a legger, care should be exercised in putting in the welt bars. If the welt hooks are straight, they should go in with a very light touch. If, when the bars are hooked up, there should be any drop-stitches, the welt hooks should then be spaced properly. There is no reason why a knitter should have to stop and pick up drop-stitches when engaged in starting a set.

If needle breakage occurs along the outside edge of a stocking, it is usually caused by the carriers touching the sinkers and pushing them to one side. If this condition is all along the machine and on both sides, it is necessary to check the condition of the friction leathers. If they are glazed, they should be taken out, brushed with a wire brush, and treated with a little neatsfoot or castor oil. It is a good plan to have extra leathers on hand so that the leathers just taken out can stand a while and absorb the oil, thus giving them better gripping qualities. If extra leathers are kept on hand, they can be easily changed in just a few minutes.

Bad selvages also play their part in breaking needles, especially when going through the narrowings. The knitter should be required to see that the snappers have the proper amount of tension to take up the loose thread

and that there is enough tension on the thread in its travel from the cone over the felts, and that the tension rings are sliding up and down freely. He should also look over the carriers for broken tubes.

Carrier tubes should set about 1/64 in. below the tops of the sinkers. Good selvages on the legger are very important. Bad inside heel selvages will cause broken needles on the footer, and rough selvages on the outside of the leg will cause unsightly seams.

Press-Offs

When an unusually large number of press-offs occur, the foreman is usually called upon to explain the trouble. A great many press-offs can be avoided, however, if the knitter is required to look for the cause each time he has a press-off and not wait until he has three or four on the same section before trying to find the trouble.

When tying up a new cone, the knitter should be sure that the cone stands perpendicular. This will prevent the thread from getting caught under the cone. He should then look over the felts and porcelain eyelets for dirty and rough spots and test the carriers for sharp and cut tubes. This last-mentioned trouble is also the cause of a large percentage of split ends and slubs.

If the silk is running off the cone, or pieces of loose silk are found on the cone, the knitter should report the trouble to the foreman at once so that it can be taken up with the throwster who wound the silk. The winder's number is always to be found inside the cone in order that this defect can be easily traced.

When a knitter keeps his needles and points in good condition, he is not troubled so much with temperature changes as one who does not. However, we shall always have narrowing trouble to a certain extent. The first thing to do is to check up on the narrowing comb or finger. The points should then be examined when they are going down between the sinkers and dividers to see that they are in the center and evenly spaced. The knitter should note the grooves of the points to see whether they have been closed by previous pliering, and also examine the curve of the points. The machine should then be turned over until the points and needles just come together. By trying the fit of the needles and points, one can easily see whether, if they do not fit, to plier the needles to the left or to the right. One can also note whether the needle beard is off to the side.

Knitters usually have a tendency to pull the points forward when pliering. This also causes drop-stitches, as it keeps the heads of the needles from fitting into he grooves of the points. When a new point is being put in and when the plate is being tightened, the fingers should be held in the back to prevent the pressure of the screw driver from bending the comb back (Fig. 1).

The new point should not be much out of line. If it hangs farther back than the other points, it is proof that either the points have been pliered forward or the comb bent back. If this condition arises, it should be investigated further. One of the old points should be taken out, care being taken not to bend it. The knitter should look down the stem; and if it has a bend in it, he should have the fixer straighten the comb. If, on the other hand, the points are back too far, they will not take the stitches off, thus leaving an eyelet hole.

Needle beards too high or too low will also cause narrowing trouble. As practically all machines now make picot, the rule is to keep the needle beard up high enough so that the butt of a needle of the same gage just touches when slipped under the tip of the needle beard.

Picot Smashes

Most picot smashes are caused by the picot bars not moving freely. When putting the picot bars up or down, the knitter should not take hold of the bars, but instead should use the handle in one hand and the lock bracket in the other. They should be handled very carefully and not pushed down too hard. Care should be exercised when putting in new points. When the plate is tightened, the fingers should be held in back as it is a very easy matter to put the bar out of adjustment (Fig. 2). If the bar should be forced back, it will bind on the narrowing rod.

When setting a picot bar, the knitter should be sure that the bar is loose before screwing in on the setscrews. And after tightening up the bar-screws, a divider should be used as a feeler gage between the setscrews and the narrowing rod. This should be a snug fit. The jam nut should then be tightened to hold the setscrew adjustment.

The setting of the picot bars is the same as that of the narrowing fingers. They should always be in the center between the sinkers and dividers. If drop-stitches occur while putting in the picot, the knitter should look for bent sinkers and dividers and close needle beards. A lot of this trouble can be traced to carelessness in turning the welts through pressing too hard on the welt bar when lining it on the needles, and bending the heads of the needles back when turning the bar over the needles. The bar should be laid on as lightly as possible; and when brought up, it should be kept away from the beards. The higher the bar is brought up before it is turned over, the less is risk of bending back the heads of needles.

Stockings running short should be investigated at once. Usually the causes are dry silk, dirty felts, or too much

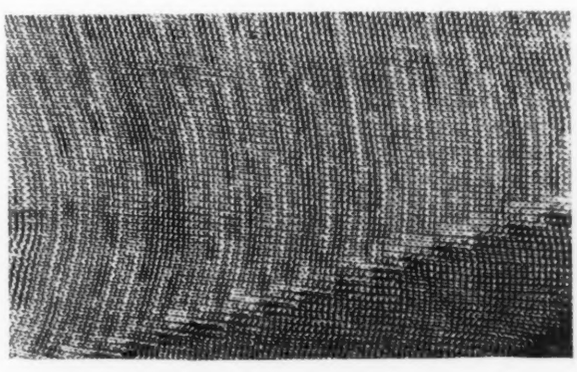


Fig. 3. Close-up of bad plating

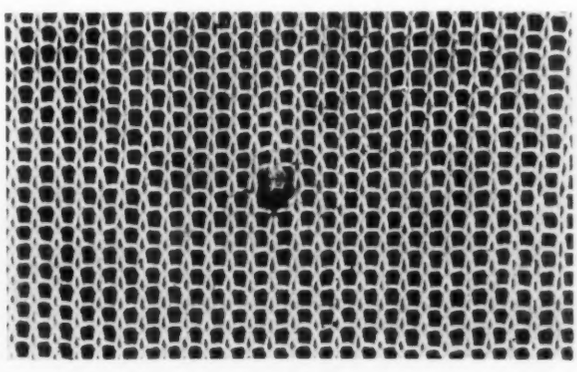


Fig. 4. Careless handling of welt wires causes small cuts like this

tension on the silk through not running over the felts properly. If this trouble is not corrected, it will load up and break needles in the heel narrowings by putting too much tension on the fabric.

Plating

Usually the knitter does not realize the importance of proper plating, due to the fact that he does not have the opportunity of seeing the stockings after they have been dyed, boarded, and inspected by the examiner (Fig. 3). Stockings with bad plating have to be put in for seconds. This trouble could be avoided by a little more care on the part of the knitter.

After the plating attachments are properly adjusted, they do not get out of time very easily. Usually the trouble is in the tension. There should be enough tension on the thread to keep it steady and to prevent more thread from going through the snappers than can be taken up by them at the end of the course.

If a silk splicing is used, all the moistening devices should be kept uniform to prevent dry silk. Dry silk not only causes sleazy work at this point but will also cause narrowing trouble in the heel, due to excess pull on the fabric. When putting in the splicing carriers, the knitter should push the carrier up to the inside stop and then note whether it is in the right position. This is the time to see whether the pointex rack has been properly set. The carriers should then be pushed back up against the outside stops. The needles should also be turned up before the friction boxes are locked. This will leave the threads on the selvages, and the knitter can cut the threads without fear of cutting the stockings. The ends should be cut short or not over one half inch in length. Long ends are likely to get caught in the seaming and cause pull-threads.

Too much weight should not be taken off while going through the splicing, as this is likely to cause sleazy work in the instep. The knitter should ease up on any stocking that might be running a little too short so that it does not have too much pull when going through the heel narrowings. It is a mistake to try to run the machine fast through the splicing and heel, as this not only interferes with good plating but causes excess strain on the coulier motion. Bad plating in the left heel is generally caused through not having the left-heel carriers threaded properly. The thread should go as directly as possible from the snappers to the carriers, so that the tension will be the same no matter in which direction the carriers are traveling.

Removing Welt Wires

In pulling out the welt wires, the knitter should be very careful not to let them touch any part of the stockings. The least bump will cut or weaken the fabric in such a way that the stocking will break out and the cut will not show up until it is put on the examiner's expansion form (Fig. 4). No matter how small the cut, it cannot be mended and the stocking passed for first quality.

Care in taking out the welt wires cannot be emphasized too strongly, and only by watching the knitters and helpers perform this operation can the defect be corrected. If the knitter is going from left to right, he should pull out the wire with the right hand and place it in the left—and he should observe this same procedure with each individual wire. He should by no means pull out four or five wires before transferring them to the other hand. Only by observing the above safeguard can these slight cuts in the knitted fabric be eliminated.

Care should be taken to see that all the carriers are threaded, because checking them at this point saves time in starting the next set. Loose threads should not be allowed to get on welt bars, or short ends to fall down on needle-bar trucks. After pressing the set off, the knitter should be careful while picking up the stockings to avoid causing pull-threads.

Should a footer continue to break needles after he has checked the carriers, friction leathers, and tensions, it is necessary that he investigate the condition of his topper bars. Transfer bars should fit the topping stand without the toppers having to work them in with the thumb. If not thus fitted, the topper is bound to get hooks in the transfer points which will surely break needles. When bars are being dropped in the machine, they should be kept back away from the needle beards until they are all the way down. The bars should be handled very carefully when they are being taken off after transferring. The heels should also be looked over to see whether the work is creased properly. Failure to crease all the way out to the loose course will cause broken needles on the ends. Creasing too deep, due to bad heel selvages, is another common cause for broken needles and unsightly heels.

Many seconds are caused by the topper while breaking the thread and pulling the stitch on the bar after raveling out the instep. This pulling of the stitch destroys the loop formation on the instep, which is the most important part of the stocking. A careful topper will cut the thread and avoid this defect.

Care should be exercised when laying the bar on the rack not to bump the bar against the stocking on the previous bar. This is likely to cut the fabric as already described in relation to the welt wires. The same rule applies when the bars are being placed on the machine ready for transferring. They should be laid on the machine with the stockings on top, as this will avoid any risk of cutting the fabric.

Stockings breaking out in transferring usually break in the corners. When this happens, it is necessary to locate the bar which is causing these cuts and to put in new points or have the bar buffed.

The knitter should be sure that all the stockings are hooked up with the same amount of tension on the take-up straps in order to insure an even pull on the fabric. The center hook should not be released until the toe is put in, because releasing the center hook too soon will cause sleazy fabric in the foot. After the set is pressed off, the stockings should not be grasped at the middle of the leg and dragged off the machine, but picked up by the foot one at a time. The footer should be constantly watching for bad corners and poor matching of the foot and leg. Much of this can be corrected by adjustment of tensions and moistening.

The points discussed above might seem to add greatly to the supervision already required of the foreman. This may be true at first to some extent; but once the knitters are taught and throughly understand how to prevent the defects from occurring, a great deal of responsibility is lifted from the shoulders of the foreman or supervisor. And the idea itself is fundamentally sound, due to the fact that at present-day prices it is impossible to go on producing hosiery that will not pass as first-quality merchandise. All efforts directed to the elimination of defective work can therefore have but one result—namely, to provide steadier work and more money for every one within the organization.

Moratorium ON MASSACHUSETTS LABOR

RESTRICTIONS PROPOSED TO MEET COMPETITION

MASSACHUSETTS has served notice on other textile manufacturing States that unless they bring their labor laws up to the level of those of Massachusetts, she will bring hers down to their level, "as an economic necessity." This warning was sounded in unmistakable terms at the Eighth New England Conference held in Boston Nov. 17-18 under the auspices of the New England Council. It was expressed by no less a person than the chief executive of the State, Gov. Joseph B. Ely; in the official memorandum prepared by the officers of the Massachusetts Division of the Council; and in the address of Henry P. Kendall, president of the Kendall Co., at the Massachusetts dinner.

The memorandum submitted to the Massachusetts Division contained this significant statement:

"We have advanced laws not found in other competitive States, which keep capital from our industry and hamper the securing of orders. Solicitation from other States has caused serious industrial migration from Massachusetts. In our opinion, either the laws of other States must be brought up to ours or we must consider how much longer we can afford to be so much in advance of our competitors."

The specific suggestion made by Mr. Kendall was that a moratorium might be declared on certain phases of the restrictive legislation of Massachusetts, and particularly that the 6 o'clock closing period might be suspended to permit women to work up to 10 o'clock at night. To that end he suggested that a conference might be called by Gov. Ely to include labor leaders, textile manufacturers, and representatives of the public. The speaker made no attempt to conceal his regret that such a step must be contemplated but saw no alternative if Massachusetts industry and its workers are to be protected against uneven competition.

Mr. Kendall said in part:

"From 1923 to July of 1932, 59 cotton mills in Massachusetts liquidated and moved the machinery out of the State, removing a capitalization of close to $60,000,000, a value for tax purposes of over $115,500,000, on which these mills paid in taxes over $3,000,000 annually. Over 56,000 employees were deprived of employment; a total of close to $56,000,000 annually in wages was dropped from payrolls in Massachusetts. These figures are from the Massachusetts State Records. What has been the cause of that?

"Restrictive legislation has been claimed by some to have been the cause. That is not fair. It has been a contributing cause of great importance. Inefficiency of management, resulting in the use of obsolescent machinery, has been another contributing factor, as have also the introduction of competing synthetic fibers, the longer hours worked in the South, and in some other States in New England, and especially the night operation of southern cotton mills and the operation of those mills with women and minors working all night.

"In 1919, 1921 and 1927 Massachusetts took the lead in social or labor legislation and provided that no girl over 16 years of age could work for labor, as differentiated from office work, in mills or factories more than 48 hours a week or more than 9 hours in any one day and not after 6 o'clock in the evening. What so many mill men complain of is that those laws restricted any worker over 16 years of age working after 6 o'clock in the evening. Now for the causes which I have given you, most of the mills making such cotton goods as print cloths or heavier, have either changed, closed up, or left New England, and most of the spindles now in operation are on fine goods and style goods and silk mixtures or rayon and cotton mixtures. Such goods are highly seasonal and have the style element, and Massachusetts has an abundance of skilled, experienced labor for the manufacture of those fine goods which are made less successfully, to a large extent, and in very few mills in the South. Cotton mill men complain bitterly that style goods have to be finished up quickly and rushed to the market. Their inability to operate their mills in the evening and overtime to get out such rush orders prevents their being able to take the orders.

"I have long been an advocate of the shorter work week, and since the fall of 1929 have worked in the industry for the elimination of women and minors from all night running, and for the shortening of the work week for both people and machines. Some progress has been made on that. Mills comprising some 80% of the spindles in the industry two years ago agreed to eliminate women and minors from night running and not to operate more than 55 hours on the day-shift and 50 hours on the night-shift. The 80% who have held out for some two years are now throwing up the sponge due to the non-cooperation of the 20%. It looks as if even those arrangements would be broken wide open. Whether the shorter work week can be brought about nationally by State legislation or by edict or by focussing and mobilization of public opinion, I do not know, but just so long as that goes on the continuing loss of spindles in Massachusetts and the unemployment of skilled workers are going on.

Henry P. Kendall

"I stand here tonight with somewhat mixed emotions. I don't want to see, if it possibly can be avoided, Massachusetts step back and work under the laws of the jungle which characterize too much of American business today, but it does seem to me that Massachusetts may well consider a moratorium on certain aspects of these laws that will permit, without abandoning the principle of the shorter week, modification by legislation or by interpretation or administration so that the remaining textile companies, which in the law have been discriminated against as compared with other industries, may have a fair 'break' until other States in New England, or other States in the South, come more nearly to our code. It is quite conceivable that the 6 o'clock closing period might be suspended to permit women workers to work up to 10 o'clock at night as they can in other industries. There is no reason why that relief should not be given to textile mills, the work of which is not harder than in a printing establishment or a shoe shop, and I hope that Governor Ely will call a conference of the labor leaders in the textile trades, of important and broad-minded managers of textile mills, of citizens with the public welfare at heart, and see if some agreement cannot be reached by which a moratorium on some of these matters could be brought about until Massachusetts is in a better competitive condition in textiles."

Organized Research

SEEMS NEARER ACCOMPLISHMENT AS AGENCIES COOPERATE

MORE than two years ago we stated in these columns that "it would seem apparent that the activities of the Textile Foundation and the United States Institute for Textile Research, instead of conflicting with or duplicating each other, can be coordinated toward the prompt accomplishment of the purpose each has in mind." We came away from the annual meeting of the U. S. Institute last month impressed with the belief that such coordination is being achieved.

In fact, not only these two organizations but other groups interested in research seem today to be working more closely toward a common end than at any time in the past. Among the speakers at the meeting, all evincing an active interest in the movement represented by the Institute, were Franklin W. Hobbs, chairman of the Textile Foundation; Prof. Louis A. Olney, chairman of the research committee of the American Association of Textile Chemists & Colorists; and Dr. W. E. Emley, of the Bureau of Standards, and chairman of the Institute's research committee.

Although organized fundamental research in the textile industry in this country, as an accomplishment, may still seem remote, the prospects certainly seem brighter. This statement is based not only upon the realization of coordinated effort, referred to above, but upon the record of steps taken by the Institute during the last year, in the face of depression. Among these accomplishments, are the following:

Continued operation of the Institute in black figures —no small achievement for any organization these days, as textile men will readily admit.

Willingness of Francis P. Garvan to accept the responsibilities of the presidency of the U. S. Institute, and to give to that organization, in addition to his own services, those of William W. Buffum, treasurer of the Chemical Foundation, as his active representative in the Institute.

An increase of 245 in the membership, bringing the total to 385, as compared with 136 at the close of the previous fiscal year.

Publication of "Textile Research: A Survey of Progress," a volume which, it is hoped, may prove even more effective as a promoter of research-mindedness among textile men than as a mere record of textile research progress.

Selection by the Textile Foundation, for most of its 20 researches now in progress as fellowships and scholarships, of subjects originally selected by the research committee of the Institute as part of the latter's program.

Preliminary report of the Institute's committee on economic research, which has as its objective a program of studies of the industry's most pressing and vital economic problems.

These accomplishments, and others, were noted in the reports of the board of directors and of the secretary, as summarized for the meeting by Secretary Charles H. Clark.

The "Way Out" Clearly Indicated

All the speakers at the meeting pointed to research as the "way out" of the difficulties confronting the industry.

A critical but sympathetic analysis of the industry's research problem was presented by Dr. E. B. Millard, of Massachusetts Institute of Technology. Dr. Millard paid a tribute to the achievements in scientific research of the chemical, petroleum, electrical, communications, and other large industries of the country, and compared them with the inferiority of American achievement in textile research. Following out this thought he said:

Francis P. Garvan

Franklin W. Hobbs

"The remedy for this condition with respect to textile research lies along the paths already indicated by your report of progress but at considerable distances down those paths. One of the chief requisites would seem to be much larger appropriations toward the support of research by the whole industry. . . . A very small contribution on a percentage basis by all the textile manufacturers would provide a huge sum for scientific research. . . .

"Obsolete machinery of however great beauty, or the newest machinery for making a fabric nobody wants, are unpleasant to our thought; but if by research we do not keep ahead of the times, we shall have both. The New England specialist in horse blankets of 20 years ago probably did not begin research on motor robes when the

Selden automobile patents were first issued, but when there was no longer any market for horse blankets. . . .

"Once an enthusiasm for research is born, its greatest peril is in wishing to accomplish too much too soon, and we must guard against this quite as much as against doing too little hurriedly. Only persons of great vision and the broadest possible education should be allowed to select the problems to be studied. One of moderate capacity might reject important clues or even great discoveries on account of his inability to sense their significance, and he might urge the study of trivialities or of his hobbies at great length. . . .

"The vast spread of the textile industry over the continent, with a mill in almost every village, makes coordination of effort to the very highest degree the vital need—the essential link without which we fail. For, without coordination, millions of dollars or millions of men or even millions of years may be squandered in spinning thin uneven threads or twists of fact—some of value, many of none at all."

Foundation Fellowships Promise Progress

One of the most important contributions to the cause of textile research has been the series of studies initiated under grants from the Textile Foundation. Particularly does this remark apply to the fellowships and scholarships established by that organization since these not only promise actual accomplishment but tend to build up a reservoir of trained men, without which no advance is possible. In commenting on the Foundation's work, Mr. Hobbs said:

"In all branches of the textile industry there is a growing appreciation of the close relationship between research and the ever-changing problems of production. . . .

"As as indication of the country-wide interest in our plan, I may state that there were nearly 700 applicants from 39 States. . . . The men are all at work, but fundamental research of the sort that is being carried on requires a good deal of preparation and study of existing knowledge of the problems in hand. . . . I am sure definite results of this research work will come later and will be of great practical value to the textile industry."

In addition to speaking of the work in progress and recently completed by the American Association of Textile Chemists & Colorists, Professor Olney expressed his belief in the need for a central research building. He visualized one wing of this as being occupied by the textile chemists' organization. Pointing out that the total value of textile products is about five billion dollars annually, he remarked that one-tenth of one percent set aside for research would make five million dollars available, and that even one-fifth of this percentage would produce one million dollars.

"If the U. S. Institute for Textile Research can educate the textile industry to contribute this insignificant amount regularly toward the support of research work, textile research and the future of the industry would be assured in this country," said Dr. Olney. "At present the textile industry is contributing toward research considerably less than one cent on every thousand dollars of sales. Think of that!"

Dr. Emley reported not only for the Institute's research committee but for the U. S. Bureau of Standards and showed that studies undertaken by the Bureau originated either from the consumer or from the manufacturer or were initiated by the Bureau.

Paul T. Cherington reviewed the work of the Institute's committee on economic research. He stated that the textile industry is not only an art and a science, but also, and primarily, a business. The scepter of control over the industry, he said, has passed from the producer to the consumer—and can only be regained by the former through research.

Prof. Louis A. Olney

Dr. W. E. Emley

Dr. E. B. Millard

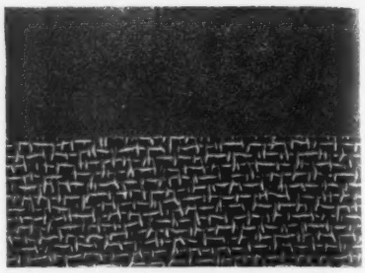
Paul T. Cherington

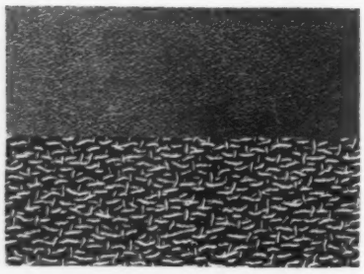
Dr. Harold DeWitt Smith, of A. M. Tenney Associates, reported on that part of the recent meeting of the Faraday Society in England devoted to the colloidal aspects of textile chemistry.

All the old officers and members of the executive committee were re-elected by the directors with the following changes: Dr. E. H. Killheffer, manager of the Fine Chemicals Division of E. I. DuPont de Nemours & Co., succeeds Albert F. Bemis as a vice-president; and Joseph Bancroft, chairman of Joseph Bancroft & Sons Co., Wilmington, Del., succeeds Thomas T. Clark as a member of the executive committee.

The only changes made in the directorate at the meeting of the corporation, were the election of Mr. Bancroft to succeed Walter C. Taylor, resigned, for a term expiring in 1934; and the election of H. Grandage, vice-president of Clark Thread Co., to succeed Mr. Bemis, resigned, for a term ending in 1933.

Frosted Georgette





ATTRACTIVE FABRIC WHICH MAY BECOME A STAPLE

Weave A at left, weave B at right; true size and magnified four times

By B. D. Blackman

◆ *How the attractive, interesting, and practical fabric variously known by such names as frosted georgette, sable crepe, and sand crepe is made and what it costs to produce it are explained in this article.*

WE have recently witnessed a fervent activity in a fabric which, although sometimes referred to as new, proves upon closer inspection to be not so new. This weave has been presented to the trade and to the public under a multitude of names, such as sable crepe, granite weave, Sabalee, sand crepe, frosted georgette, etc. No matter what we may call this material, in studying it we have made the acquaintance of one of the most appealing of all fabrics—one of the finest products of the mass-production loom.

The earliest reference to this fabric of frosty appearance which the writer has encountered shows a draft of the weave in a sketch-book of Italian origin, published some 50 years ago. The weave made its entry into the domestic marts about ten years ago. At that time an American manufacturer of tie and muffler goods introduced a scarf after an original which had been loomed in France, but confined to ground weave only.

Next were introduced dobby effects, checks, plaids, and small neats against the beautiful ground-weave effect. Then came fast-dyed stripes, jaspé effects, cross dyes, borders, changeables, and prints.

As is usual in the case of an ultra-popular fabric, it was widely imitated. In a comparatively short time it had run its course. Demand ceased, and for years this construction lay dormant, apparently forgotten.

About this time crepes came into their own and held their sway for years. They were almost universally adopted by dress manufacturers as being the ideal cloth. Easily and inexpensively made and converted, flexible in hands of the cutter, adapted to all seasons of the year—crepe was indeed a most practical and serviceable material. But it lacked what might be called "punch."

The never-ending search among designers for the new and the unusual turned up a number of interesting weaves. Among them were the jerico, bedford cord, waffles, spun rayon, rough crepes, matelassé, and—frosted georgette.

The last is an especially welcome and refreshing change from the long reign of the simple-crepe weaves. Not too easily duplicated, and requiring a more than average skill in the manufacture, it offers a most forceful bid for popularity, in both silk and rayon. The firm, sturdy weave, the excellent durability, the reasonable production cost, and the rich hand and drape, all contribute. Frosted georgette is removed from the passing novelty class—it is joining the family of staples.

It should be borne in mind, and indelibly impressed upon those who contemplate the manufacture of this cloth, that the ultimate efficiency in the use of 100-denier yarn, 40 filaments, 50 turns, can be had only by investing in "A" quality yarns. True, the initial cost is greater to the extent of a few cents per pound; but among the most obvious benefits we find that production is increased, labor turnover is lessened, and imperfections are fewer. Lower cost per yard follows.

Entering the Warp

As can readily be seen in the accompanying illustrations, the weave repeats on 66 ends and 40 picks. Complex as the weave seems, it is actually entered on but six shafts, although the entering is admittedly complicated. It is impossible to "chop the reed," if we may use a mill term. The enterer should make a half-cross by lifting three shafts, and must select the three ends for each reed dent.

I submit a few suggestions which will reduce errors to the minimum: The enterer should have a copy of the draft, written on a sheet in groups of three (as illustrated in Table I). He should read them off in groups as he progresses. At the end of each repeat of 66 ends, he should see that eleven heddles are entered on each shaft.

Due to the complexity of the draw, it is rather too much to expect one weaver to run a half-dozen looms. In some shops it has been customary to run four to six looms per weaver on crepes and silk georgettes. Upon the introduction of this weave, the custom was continued, but it was found that stoppage increased alarmingly. Labor turnover became too great, and it was almost impossible to keep enough weavers on a night shift. Whenever possible, it is the most practical plan to have one weaver run two rayon thrown warps and two crepes, or at most three and one, respectively.

A card should be posted on each loom showing the order of entering. This will be of great assistance to the weaver. Although she is expected to re-enter any ends which may break out, the weaving foreman or floor hand should check up to see that they are properly replaced. The use of such a floor hand for each section will increase production materially and reduce the percentage of defective merchandise. It should be his duty to help the weavers keep their looms running.

All newly entered and reeded warps should, when mounted in the loom, be closely checked by the weaving

foreman. He should pay particular attention to the correct entering and reeding and see that the shafts and boxes are working properly.

Because of the complex entering of frosted georgette and the repeat of 40 picks, it is an absolute requirement that the weaving foreman have a listing as illustrated in Table II. He should check each pick for one repeat of 40 picks, seeing that the correct shafts are lifting on each pick. At the same time he is able to see if harness and reed are entered correctly and uniformly by placing his hand in back of the reed, applying just enough pressure to make the ends taut. By so doing, he is permitted to see if the empty dents on the up shed of that pick are scattered uniformly across the warp.

After dissecting innumerable samples of frosted georgette, I find that only the two weaves illustrated herewith give the desired frosty appearance. Weave *B* creates a better fabric freer from irregularities; but weave *A* is also being used with good results. Two enterings accompany weave *A*. The sole purpose of exhibiting both is to give some idea of the variety of enterings which are possible with this weave.

The cost for 100 woven yards, or 85 yd. finished, is based on actual figures—the average arrived at after a careful check-up. The guarantee on the thrown yardage was 37,500 yd. Cost per pound thrown was $1.12. Take-up in weaving was 7%. Cost per yard for warping, entering, quilling, weaving, and picking was based on the commission rate of 12c. This price included the overhead of the mill in which the fabric was woven. Shrinkage in dyeing was 15%. Cost of dyeing and finishing was 6c. per yard.

Table I

Used by the enterer. Shaft nearest warp beam is identified as shaft No. 1.

1 — 2 — 3
4 — 1 — 5
6 — 4 — 2
5 — 3 — 1
6 — 2 — 3
1 — 4 — 6
5 — 2 — 1
3 — 6 — 4
5 — 1 — 6
3 — 5 — 4
2 — 6 — 1
4 — 2 — 3
5 — 1 — 6
3 — 2 — 4
5 — 6 — 2
1 — 5 — 3
4 — 6 — 1
2 — 5 — 4
3 — 2 — 6
4 — 1 — 3
5 — 2 — 4
3 — 6 — 5

Table II

Should be used by weaving foreman to determine if shafts are lifting properly. Shaft nearest warp beam is * identified as shaft No. 1.

Pick	
1	1 — 3 — 6
2	2 — 3 — 5
3	2 — 4 — 6
4	1 — 5 — 6
5	1 — 2 — 3
6	2 — 4 — 5
7	1 — 4 — 6
8	2 — 3 — 6
9	3 — 4 — 5
10	1 — 2 — 4
11	2 — 5 — 6
12	1 — 3 — 5
13	3 — 4 — 6
14	1 — 2 — 6
15	2 — 3 — 5
16	1 — 4 — 5
17	1 — 3 — 6
18	2 — 3 — 4
19	4 — 5 — 6
20	1 — 2 — 5
21	1 — 3 — 4
22	3 — 5 — 6
23	2 — 4 — 6
24	1 — 2 — 3
25	1 — 5 — 6
26	2 — 4 — 5
27	2 — 3 — 6
28	1 — 4 — 6
29	3 — 4 — 5
30	2 — 5 — 6
31	1 — 2 — 4
32	3 — 4 — 6
33	1 — 3 — 5
34	1 — 2 — 6
35	4 — 5 — 6
36	1 — 3 — 4
37	1 — 2 — 5
38	3 — 5 — 6
39	2 — 3 — 4
40	1 — 4 — 5

Construction:

Weave—frosted georgette:
Warp—two left twist, two right twist.
Filling—two right twist, two left twist.
Warp material—100-denier, 40-fil. viscose, 50/55 turns.
Filling material—100-denier, 40-fil. viscose, 50/55 turns.
Reed width—47 in., including edges (which are run from beam).
Warp ends—6420/1 (including edges).
Reeding—edge, 11/3/2 = 66/1
ground, 2096/3/1 = 6288/1
edge, 11/3/2 = 66/1

Total dents,	2118	6420/1

Warp length—107 yd. (for 100 woven yards—7% take-up).
Weaving—72 picks per inch.
Take-up in weave—7%. Waste—2%.

Cost:

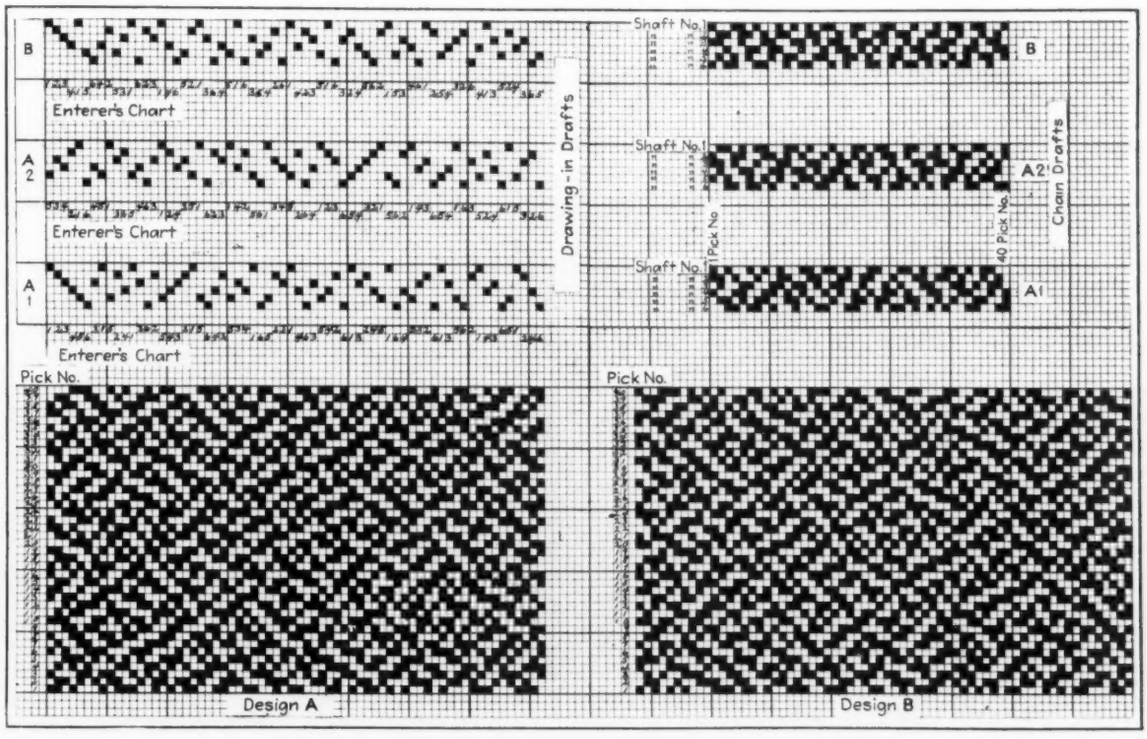
Warp—
$$\frac{6420 \times 107 \times 1.02 \times \$1.12}{37500} = \$20.9268 \text{ cost of warp stock for 100 woven yd.}$$

Filling—
$$\frac{72 \times 47 \times 1.02 \times 100 \times \$1.12}{37500} = \$10.309 \text{ cost of filling stock for 100 woven yd.}$$

$20.9269	cost of warp stock
10.309	cost of filling
12.00	cost for 100 yd. at commission rate of 12c. per yard for all mill operations
$43.2359	cost of 100 yd. gray
$43.2359	cost of 85 yd. (15% shrinkage in dyeing)
5.10	cost of dyeing and finishing at 6c. per yard
$48.3359	cost of 85 yd.
$.5686	cost of 1 yd. (stock, woven, dyed, and finished).

This cost per yard does not include New York selling-office overhead, selling commission, or converter's profit. It is merely the cost of thrown yarn, mill operations, and dyeing and finishing.

An explanation of the short method of cost calculation used in this article follows: Warp (6420 ends)—6420 yd. of yarn to one yd. × 107 yd. (length) × 1.02 (2% waste) × $1.12 (cost of yarn per pound thrown), divided by 37500 yd. guarantee = cost of 107 yd. of warp stock woven to 100 yd. Filling—72 picks per inch × 47-in. reed width = 3384 in. to 1 in. or 3384 yd. to 1 yd. × 100 yd. (woven) × 1.02 (filling waste) × $1.12 cost of yarn, divided by 37500 = cost of filling stock for 100 woven yards.



Hours and Wages

IN TEXTILE MILLS FRANKLY CRITICIZED BY W. C. TEAGLE

DISCLAIMING a desire to be regarded as a "Citizen Fixit," but stating that "the severity of a national crisis must excuse my intrusion into your affairs," Walter C. Teagle, chairman of the Standard Oil Co. of N. J. and also chairman of the National Co-ordinating Committee of the Share-the-Work Movement, offered to the meeting of directors of the Cotton-Textile Institute in Spartanburg, Nov. 15 just about as frank criticism, in as charming a manner, as any previously received by the industry from the outside.

He was disarming from the start. "Your president will have to tell you," he remarked, "whether I am here by invitation or on a dare. You know who always gets hurt in a street battle: perhaps your guest is the innocent bystander. The New York papers report that there is to be a 'knock-down and drag-out' fight at this meeting. As I weigh 17 stone on the hoof, you may have to borrow a tractor to drag me out if the fight materializes.

"On the theory that those who carry glass flasks should not sit down on stone walls, my right to talk to you about long hours may be questioned. The petroleum industry is not yet simon-pure in its industrial relations."

Mr. Teagle said, in part:

The problem of bringing the industry's production down to market requirements is for you to settle without gratuitous advice from plumbers or refiners. But in the name of common sense, do not wait for it to be decided by test of battle, by the survival of the fittest. Because a prostrate victor is not much better off than his dead enemy, who at least has no more worries. You can't stage a fight in your industry and confine it to board rooms. The real sufferers are the mill workers, with no voice in the industry's disagreement.

If the textile industry is confronted with the necessity of paying higher wages in the process of reducing unemployment, we seem to have another case of the irresistible force striking the immovable object. I have talked with enough men in your industry to know what they think of the possibility of raising wages and remaining in business unless the entire industry goes along with them. In all kindness, I am sure, one of them intimated that another Don Quixote had tilted at windmills, and that while the good Don has been dust these many hundred years, windmills still turn. So, too, the textile industry will be with us just as long as people wear clothes. But as an outsider looking at it in relation to our social order, I venture to predict that it will not be operating much longer as at present: on a basis which all too frequently requires that several members of one family—father, mother and children—must work to earn that family's livelihood; that involves longer hours than the public has come to regard as a fair day's work; or that employs women and minors on night shifts. Because those are matters that will not always be left to the decision of management.

There is, however, a third interested party that has the right to veto over policies inimical to the best interests of the public. It is the State. Do you gentlemen wish to invoke exercise of that power? I hope not, for you yourselves can handle such matters infinitely better out of your intimate knowledge of your business, to the mutual advantage of your industry and the public.

Perhaps you will bear with me while I refer to an experience we had in the oil industry, for the lesson it may hold. Thirty years ago the twelve-hour day was the rule and not the exception. There was a great shaking of heads when we dropped to ten. Adherents of the long day predicted ruination of competitors who paid same wages for two hours' less work. Yet a few years later, the more progressive refiners went on down to an eight-hour day. The most interesting aspect of that change was that it added so little to unit cost of production that it put the eight-hour operator at no disadvantage against the competitor working longer shifts.

Perhaps you can not go on a shorter week at present wages without a slight increase in prices. I do not think that the public opinion would hold that to be a calamity. There is no disposition on the part of the public to expect its wants to be supplied below the true cost of production, at the expense of the workers. As a matter of fact, the total increased cost to your great industry would be spread out so thinly over hundreds of millions of pieces of goods turned out annually as to be unnoticed by the retail purchaser. The consumer could not find it in the price of a handkerchief, shirt or a pair of pajamas.

And what would such an adjustment mean to the communities in which your plants are located and to the several States which predominate in textile manufacture? Greater purchasing power means, of course, increased sales by the merchants and more activity for the entire community. In short, a marked and general improvement in the prosperity of the State. The employee and his family would be healthier and happier with additional comforts and increased leisure.

Public opinion in this country can strike with devastating force. Witness the verdict at the polls the other day. The prosperity of a company or an entire industry over a considerable period of time depends on the retention of the public's good will. Your industry stands today at an important cross road. Will it cooperate further within its own ranks, and with outside movements such as Share-the-Work for the general good? Will it continue to merit public support? Will it put its own house in order, or will it follow the dictates of short-sighted selfishness and slip back again into internal conflict? I hope that the answer is not in doubt, that sound judgment will prevail, and that as a result you will be able to balance production with market demand through shorter working hours for your employees. If this involves some increase in hourly or piece-work rates and the complete elimination of night work by women and minors, that should not be allowed to stand in the way. If your institute is so weak today that it is threatened by less than 20% who make the cost sheet their god, can't you strengthen it? I hope you will decide to hold fast to your reforms accomplished to date and carry them further. You can get after the misguided brothers who are following a school of economics that went out with the bustle. Organize so that most of those who are still able to invalidate the sound practice of 80% of your industry will embrace constructive policies.

Such action would seem to be precedent to any widespread adoption of work sharing for the relief of your unemployed. That is my excuse, if any is needed, for talking to you with such frankness. I want to see a large part of the 100,000 idle mill operatives brought back into the family of wage earners. You gentlemen here can make that possible. You can do it by putting your industry on a prosperous basis. First out of the red will be those who supply necessities or replacements. The textile industry is foremost in this class. It is a favorable position to lead the parade to good times.

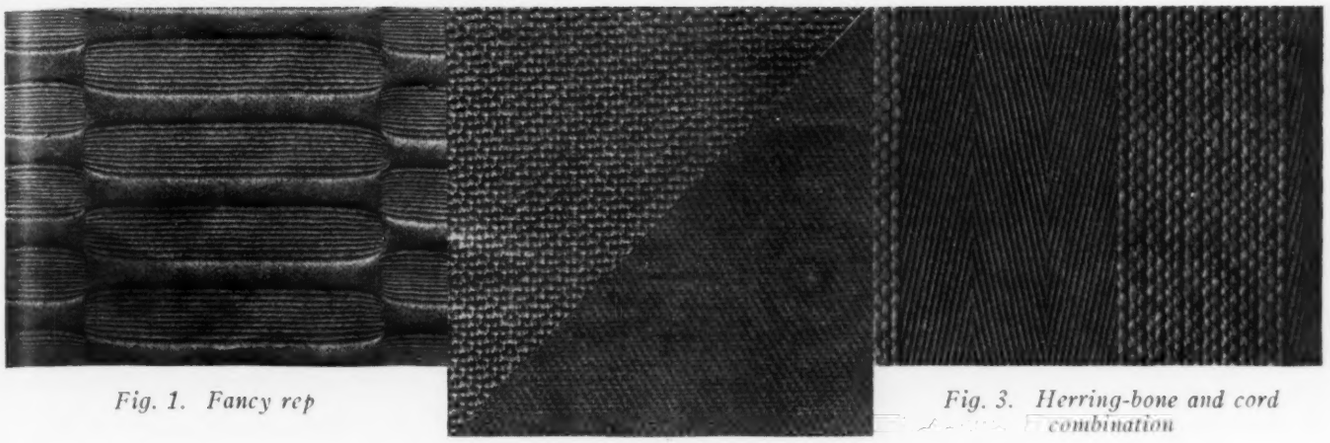


Fig. 1. Fancy rep

Fig. 3. Herring-bone and cord combination

Fig. 2. A fancy twill glued to a backing of three-harness drill

Handbag Fabrics

By Thomas Nelson

Dean, Textile School
North Carolina State College

SOME interesting cotton fabrics are now being used in the manufacture of women's handbags. The different fabrics used are too numerous to mention, but their variety discloses interesting possibilities in the selection of constructions. The fabrics range from the simplest printed plain material to reps, piqués, corded fabrics, crepes, ratinés, novelty fabrics, embroideries, and tapestries.

A few illustrated examples should prove enlightening to those who have not previously studied this subject. Fig. 1 is a fancy rep, mercerized and dyed blue with a construction of 144 ends and 44 picks. The warp is 60/2 count; and the filling, 40/2. In the wide stripe there are nine narrow ribs with one pick in each rib, and there are eleven picks in the wide rib. In the outside narrow sections there are eleven narrow ribs with one pick in each rib and nine picks in the wide rib. This fabric makes a very attractive bag.

Fig. 2 is a combination material consisting of two fabrics glued together for securing strength. The face fabric is exceptionally well made from mercerized yarn, the fancy twill weave making a very durable fabric. The construction is 88 ends of 40/2 and 47 picks of 24/3. The back fabric is the regular three-harness drill.

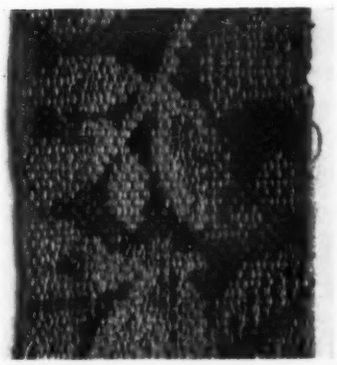


Fig. 5. A light-weight tapestry

Another well-made fabric is illustrated in Fig. 3. This consists of three sections of twill in a herring-bone stripe, altogether making a wide stripe. This, placed next to a stripe which has cords superimposed over a number of threads weaving plain, causes the cords to stand out prominently. The yarn used in the herring-bone stripe is about 36 single; and in the cord 4-hank roving, double and twisted, is employed. The weave used in the herring-bone stripe is the five-up, one-down, one-up, two-down, one-up, one-down twill woven as a 63 degree—that is, the twill weave begins on every other pick. Each cord is bound to the fabric every fourth pick. In each alternating cord the binding point is in the middle of the float in the next cord.

Another material which has attracted attention is an embroidered fabric illustrated at Fig. 4. This makes an excellent-appearing bag. Fabrics of this description have been used also for women's summer shoes.

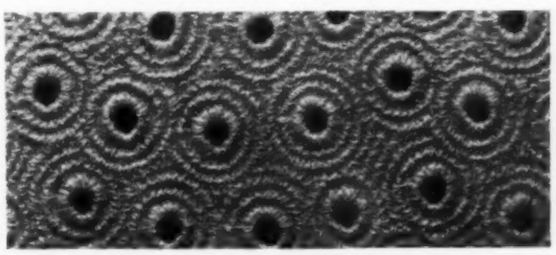


Fig. 4. Embroidered fabric

Light-weight tapestries have also been used considerably. A sample of this fabric is shown at Fig. 5. This consists of cotton and rayon yarns in a variety of bright colors and makes a very attractive bag.

A number of leno fabrics which are being used this season in the manufacture of shoes are also used for hand bags.

ADVANCE LAYOUT OF WORK IMPORTANT IN *Throwing*

By Stewart H. Gilston

THE planning and laying out of the work by the foreman is of vital importance in any department of a throwing plant, particularly so in the twisting department. Here this practice does away with needless gear changing, reversing the direction of spindles, stripping machines, and changing the operators from one class of work to another.

In laying out the work for a department of upstroke spinners, the first thing to be considered is the production per twister. The calculation is greatly simplified by the use of a twist constant. For example, on a wide-gage, 72-spindle upstroke spinner, with a spindle speed of 10,600 r.p.m., running 8 hr. and adding 2½ turns in 150-denier rayon for warping, the production is worked out as follows:

$$\frac{\text{no. of spin.} \times \text{r.p.m.} \times \text{min. per day}}{\text{yd. per lb.} \times \text{in. per yd.} \times \text{turns per in.}} = 100\% \text{ prod.}$$

Substituting the figures in the example, we have:

$$\frac{72 \times 10{,}600 \times 480}{30{,}000 \times 36 \times 2.5} = 135.5+ \text{ lb. per twister}$$

To arrive at the constant, omit the variables—namely, the yards per pound and the turns per inch—as follows:

$$\frac{72 \times 10{,}600 \times 480}{36} = 10{,}176{,}000 \text{ constant}$$

Divide the constant by the product of the variables, and the result will be the production per twister:

$$30{,}000 \times 2.5 = 75{,}000$$
$$10{,}176{,}000 \div 75{,}000 = 135.5+$$

Thus, if a foreman figures on a 90% production, he will know that he will be able to get off about 120 lb. per twister daily.

While this constant is apparently a large figure to use, it will be noticed that the writer employs round numbers in the yards per pound, using 30,000 yd. instead of 29,763 yd. for 150-denier, 15,000 yd. instead of 14,881 yd. for 300-denier, etc. This does not throw the final answer off appreciably, as no allowance is made for contraction; but it simplifies the use of the constant, as the ciphers always cancel out. Therefore, for all practical purposes, this method serves admirably.

In running a large number of spinners on the same kind of work, better production and quality are maintained with less operators if a time schedule is worked out for doffing. This is particularly true where shift work occurs on high-twist yarns.

The writer has in mind a large twisting department in which 42 spinners were running 300-denier 25-turn yarn for moiré weaving. The operators were paid an hourly wage and bonus over a certain number of pounds. The spinners ran three shifts of 8 hr., and all production had to be weighed before the weighers could leave at the end of the shift. Each operator ran two spinners and doffed when the iron-head bobbins filled up, generally doffing one spinner after the other. By the time the second one was doffed, the first one was all but run out; and it would often take an hour to straighten out the two spinners. In order that as many pounds as possible could be taken off for the sake of the bonus, the last doff before changing shifts was either a short doff or the bobbins were too full. The weighers were overtaxed, due to the half doffs taken off while the foreman was in some other part of the department.

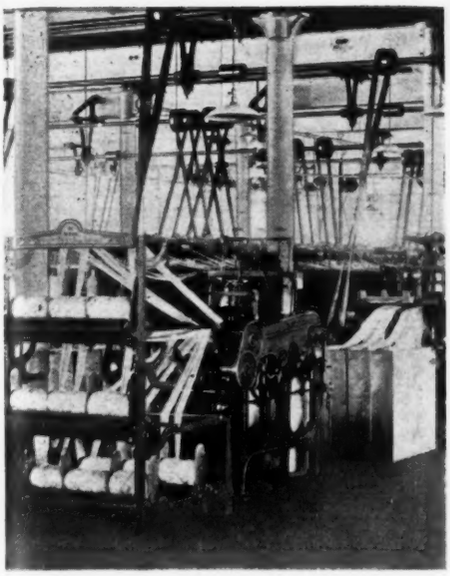
In going over the situation, the foreman found that a doff ran 3¼ hr. Therefore, the operators were given three spinners instead of two, and the time that each spinner was to be doffed was marked on the creel. Each operator doffed one spinner every hour; and, allowing 15 min. for this operation, ¾ hr. remained to get all the ends up on the other two spinners before the next doff.

The results were manifold. The mill gained production per spindle on twisting; and, as there were less short doffs to run off, production was stepped up on quill winding. Running three spinners the new way instead of two spinners the old way, the operators found their work much easier. Their bonus increased with the increase in production. The weighers finished their work by the end of the shift, as the last doffs came off one hour before the shift changed. Last, but not least, the foreman found that he had satisfied operators and did not have to neglect other work watching for short doffs.

The superintendent of this mill showed his foremen a point which may be well adopted by any foreman. The mill ran undoubtedly the greatest variety of deniers and twists that any throwster in the country undertook. In the days of small orders, even then in effect, the operators were constantly being changed from one class of work to another, and girls coning or quilling 75-denier one day were often running 300-denier the next day.

The superintendent's contention was that, if girls were kept in the same class of work as far as possible, the results would be worth the planning necessary to lay the work out, so that it would be possible to keep orders for fine yarns on the same machines. Consequently, if a girl was told to start up 75-denier on coning, in place of 100-denier, she knew just what tension weights to use. She was used to tying and wrapping knots on fine yarn; and if a cone built badly, she generally knew whether she or the machine was at fault without wasting time hunting for the fixer to determine the cause. Less trouble was experienced with tensions, because before that time the fine yarns channeled the tensions. If the fine yarns were followed by heavier deniers, many spindles ran broken filaments until the tensions were changed.

The same results showed in quilling 45-denier; but the big difference noticed on quilling was on crepe yarns, which were taken from the side of the bobbins instead of over-end, as in the case of low twist. The operator knew when the quills were the proper density for weaving, thus cutting down the number of quills to be rewound. And as they became more skillful in handling crepe, shiners around the knots decreased.



SUCCESSFUL OPEN DRAWING OF *Wasty Tops*

By Frederick B. Hudson

CERTAIN tops of wool received by worsted drawers contain excessive amounts of short material which leave the top during the drafting operations of the open drawing and accumulate as waste. Although defective tops cannot be rectified in the drawing operations, skillful manipulation of the rollers, carriers, and spindles can prevent loss of material in this way and produce satisfactory slivers.

One of the chief troubles in dealing with such tops is the accumulation of brush waste, which gathers behind the low front drafting rollers and under the carriers. This is caused by uncontrolled short fibers escaping the drafting action and gathering in lumps. Apart from the loss of wool, which may vary from 3 to 7%, batches of brush waste often are carried down with the sliver and formed into slubs. When large accumulations of brush waste have gathered between the carrier rollers, the top part of the batch rubs the fibers during drafting and causes rough-looking slivers.

When excessive amounts of brush waste are made in this way in the open drawing, it indicates that there is not enough control over the short fibers when the drafting is taking place. This defect can be remedied by increasing the fiber control and thus preventing the short material being detracted from the body of the sliver.

Before any mechanical alterations are made, it is wise to ascertain whether the defect is due to other causes, such as lack of humidity or oily carriers. In many cases where the temperature and humidity of a drawing room are on the low side—as on a Monday morning after a cold week-end—the fibers tend to fly and cause brush waste. In this case it would be cheaper in the long run to let the machines stand until the room warms up.

Oily carriers and dirty wood tumblers often may cause tops with excellent spinning properties to become wasty in the drawing. The oil and grease causes the fibers to cling to the steel rollers and form carrier laps. The oil absorption properties of tops vary, and certain lots of wool feel dry after 4% of oil has been applied, while others appear to be greasy with 3%. When very greasy tops are being drafted, the carriers should be cleaned every four hours and then dusted with French chalk. Should the tops still prove to be wasty after the humidity of the room and the oil content have been set right, measures should be taken to obtain more control during drafting by adjusting the ratch, twist, and carrier gearings of the open-drawing machines.

The first adjustment necessary is the setting of the ratch. When the sliver is thick in the early drawing processes it is advisable to extend the ratch by about 1 in. Wasty tops need an exacting control, and it may be advisable to err on the short side in setting ratches—especially when a fiber analysis shows that the long fibers are few in number. In processing a 6-in. top which has not more than 10% of 6-in. fibers, a ratch of 5½ in. would be ample in the early drawing operations; and in reducing and roving, a distance of 5 in. between the drafting rollers would suffice.

Slow-moving carriers cause laps, while carriers which move too quickly drag the slivers and make slubs. The bottom steel carrier should run at the same speed as the top wood tumbler. A comparison of the speeds of the top wood tumbler and the bottom steel carrier can be made by marking the two carriers with chalk and counting the difference in their revolutions. When differences in speed are discovered, they should be regulated by the carrier change gear.

The bottom carrier should be set as near as possible to the bottom front roller so as to control the short fibers at the point of drafting. The second row of carriers should be placed in a position where they will give the best control to the material under the influence of the front drafting rollers. This setting can be made only by experienced men who watch the fiber movement which takes place at this point and set the second row of carriers to give the best retardation to the short fibers. The weight of the tumblers also should be considered, because wasty tops need heavier top carriers to give more control; ordinary wood tumblers weigh about ½ lb.; but when wasty tops are being drafted, it may be necessary to use tumblers which weigh 1 to 1½ lb.

Carriers control the twist in the sliver and prevent it from escaping while the drafting takes place. More twist should be inserted in dealing with these tops to apply a more exacting control over the short fibers. The surface speed of the carriers should never exceed twice the surface speed of the back rollers.

When the carrier control has been set right, attention should be given to increasing the twist. Tops with a majority of even fibers can be given a minimum amount of twist, but in dealing with wasty materials an effective twist control is essential. It should be borne in mind that all the twist inserted in a sliver does not escape when the drafting takes place, and therefore a considerable amount of twist which is applied to open-drawing slivers remains in the sliver after the drawing operation. Should a sliver with two turns of twist per foot be given a draft of six in a drawing box, about one-third of a turn per foot would remain after the sliver had been drafted. When four ends are drafted together in a drawing box, the final strand of sliver consists of strands of fibers held in position by the twist. An increase of twist therefore increases the control of the internal strands of fibers which are held in position in the core of the sliver.

Licker-In Speed . . .

ITS EFFECT ON CARD WASTE, SLIVER, AND YARN

By Horace Spibey

College of Technology, Manchester, England

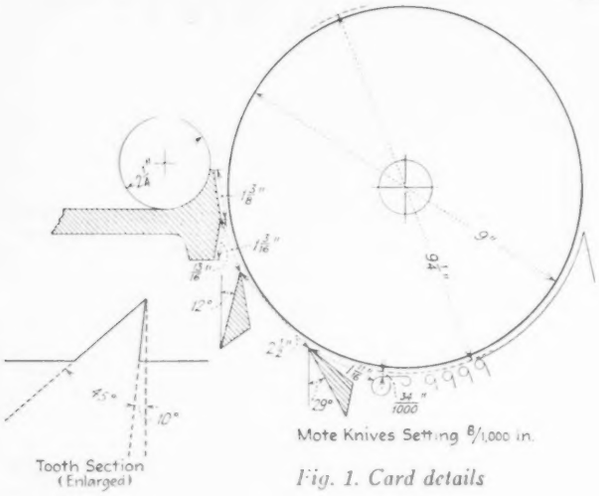


Fig. 1. Card details

◆ *That the licker-in speeds commonly employed by cotton carders are considerably lower than the safety of the card wire and cotton requires is one of the interesting conclusions drawn from a recent investigation reported in the "Journal of the Textile Institute," England. High licker-in speed transfers a large part of the opening and cleaning work from the cylinder and flats to the licker-in, which is better adapted to handle it. Stronger yarn results. As explained in this abstract of the report, however, the card waste cannot be sold so profitably.*

THE research described in this paper was undertaken to determine the effects of different licker-in speeds on waste extraction at various parts of the card, on sliver and yarn properties, and on the expense of treatment. The cotton used throughout the tests was Sakellaridis (fine). The mean and most frequent lengths respectively are 0.88 in. (22.2 mm.) and 1.17 in. (30.0 mm.). It must not be assumed that the findings of this research are applicable only to cotton of the type used, for results on American are apparently similar.

The opening equipment through which the cotton was passed consisted of bale breaker, hopper feeder, single 41-in. porcupine cylinder, picker with two-bladed beater and lap former, and finisher picker giving a weight per yard of 11½ oz. A Hetherington revolving-flat card with single rope drive to licker-in, doffer, and flats was used. Particulars of the card, other than those shown in Fig. 1, were as follows: production—10.2 lb. per hour; speeds and counts of wire—164 r.p.m. and 110s for cylinder, 10.5 r.p.m. and 120s for doffer, 2.5 in. per min. and 120s for flats; settings—feed plate to licker-in 10s, licker-in to cylinder 7s, flats to cylinder 10, 9, and 8s, doffer to cylinder 5s; licker-in points per square inch—32.

Following carding, the stock was subjected to three heads of drawing, slubbing, intermediate roving, fine roving, and ring spinning. The latter frame operated on the three-line self-weighted roller system, spinning 40s yarn from 13-hank double roving.

The various wastes—fly, cylinder strips, and flat strips—resulting from each speed test were collected. The percentages of in-put are represented graphically in Fig. 2, from which it is clear that raising the licker-in speed has the following results: The licker-in waste increases almost proportionately, whereas the cylinder and flat strips decrease, in a less degree; so that the total card loss increases slightly.

The fiber extracted at the licker-in depends on many factors, but especially on the following: shape of licker-in tooth, spacing of points and number per unit area, and settings and characteristics of mote knives and undercasing. Considering that these factors remained unaltered during the investigations, the almost proportionate increase in the licker-in fly to the speed may be accounted for in several ways. First, as the speed is increased, the number of teeth passing through the lap per unit time increases proportionately and, as a consequence, the opening and cleaning action at the feed plate is rendered more effective. Second, the deposit of fiber per unit of licker-in surface becomes less as the speed increases and there will be a greater facility for fiber to be taken out or fall out. Third, the effect of centrifugal force will result in a tendency for more fiber, etc., to be thrown out at higher speeds. The latter effect, however, is rendered more complex on account of the diminishing density of fiber on the licker-in as the speed is increased.

A hand-grading of the licker-in fly showed that the percentage of sand and dirt increased almost proportionately with the speed. This would be expected because the combing action at the feed plate is more intensive and the fiber layer on the licker-in, becoming less dense, is more conducive to the release of material such as sand.

Each sample of licker-in fly was stapled on the Baer Sorter. Table I shows the maximum and mean lengths of each sample. The results indicate that as the quantity of fly increases with the speed the mean length of its staple increases also.

At the highest speed of the licker-in (845 r.p.m.—ratio, 1.05/1) the accumulation of fiber on the teeth was noticed after running for a few minutes, thus indicating the inability of the cylinder to remove cotton from the licker-in. The fringe of the lap, on withdrawal, was extremely irregular, and the quantity of fly produced was excessive, containing an extraordinarily large amount of good-staple cotton. This test at 845 r.p.m., therefore,

was abandoned, but it does indicate that as the surface speed of the licker-in approaches that of the cylinder the removal of cotton from the licker-in surface becomes increasingly difficult. It is obvious then that there must be an adequate margin of safety in the licker-in speed to prevent damage to the card wire and to the cotton. For these investigations the critical speed of the licker-in. lies between 694 and 845 r.p.m., when the surface-speed ratios of cylinder to licker-in are 1.28/1 and 1.05/1 respectively. It would appear that the speeds normally employed in practice are considerably lower than the margin of safety would require.

Flat Strip

The flat strip percentage shows a gradual decline as the speed of the licker-in increases. This may be attributed to the fact that fiber which normally would be extracted by the flats has now been removed by the licker-in. Moreover, the better opening action taking place at higher speeds will result in less entangled fibrous masses being thrown on to, or retained by, the flats.

At the higher speeds a smaller percentage of short fiber is taken out by the flats, and the mean and most frequent lengths respectively are greater—results that accord with practical observations. Although the appearance of the flat strips at the successive speeds did not change very materially, the differences between the strips at the extreme speeds were considerable. More entangled fibrous bodies were present at the slower speeds and the strips contained more impurity.

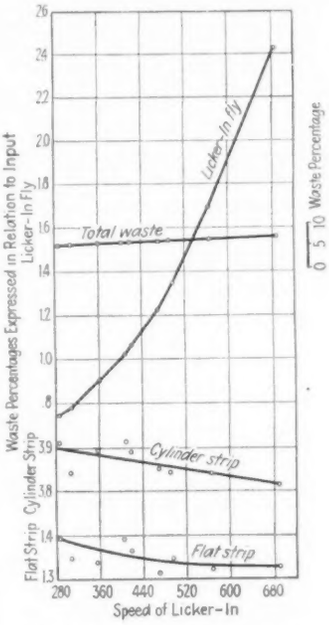


Fig 2. Relation of wastes (expressed in percentage of input) to licker-in speed

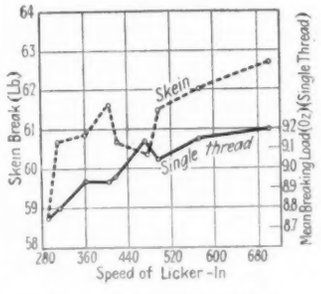


Fig. 3. Yarn breaking strengths

There is a reduction in the percentage of cylinder strip as the speed of the licker-in is raised. The extent of the reduction is more pronounced than in the case of the flat strips. The fiber-length-distribution diagrams of the cylinder strips resulting from the different licker-in speeds show no significant differences.

It is clear that at the different speeds of the licker-in there is a transference of opening and cleaning from one part of the card to another. Thus, at the higher speeds there is a transference of work from the cylinder and flats to the licker-in. With low-grade cotton this is very desirable, for the finer points of the former will be relieved of work for which the licker-in is more adapted.

The main feature concerning the web was the absence of abnormal evidence of fiber damage or nepping at any speed of the licker-in, although at very low speeds it appeared cloudy. This suggests that at the lower speeds the preparation of the cotton by the licker-in is unsatisfactory

Table I—Lengths of Lick-In Fly

Licker-in speed.....	286	309	358	408	420	472	494	570	694	845
Maximum, in.....	1 5/16	1 5/16	1 9/16	1 9/16	1 9/16	1 7/16	1 7/16	1 9/16	1 9/16	1 9/16
Mean, in.....	1 9/32	1 9/32	2 9/32	2 1/32	2 1/32	2 3/32	2 3/32	2 5/32	2 5/32	2 5/32

Table II—Losses in Carding

Licker-in speed.....		286	309	358	408	420	472	494	570	694	....
Loss	Pence per pound	.479	.479	.495	.514	.514	.529	.544	.586	.679	....
	Cents per pound	.671	.671	.693	.719	.719	.741	.762	.820	.950	....

and that at all other speeds the cotton is subjected to carding in a sufficiently opened state. The production of nep will depend also on the settings of the machine, but it may be concluded that, provided these are satisfactory, the licker-in is not conducive to nep formation. The mean staple length is slightly greater at the slowest speed, although the most frequent lengths are almost identical. Moreover, the variability of the staple is less at the slowest speed. At this speed the wastes extracted consist mainly of short-staple fiber, the mean length gradually increasing until, when the maximum speed is attained, percentage of long fiber in the waste becomes excessive.

To ascertain the effect of licker-in speed on sliver regularity, consecutive yards of sliver from each sample were weighed. From the results it may be concluded that the licker-in speed does not influence the regularity (in weight per yard) of the card sliver.

To determine the effects of licker-in speed on the strength and regularity of the yarn, 1,400 single-thread tests and 72 skein tests were made on the samples produced from each speed test. Curves (Fig. 3) drawn from these results show that the mean breaking load of the yarn increases with the speed of the licker-in. The increase in the yarn strength at higher speeds of licker-in, while scarcely to be expected from the results of the sliver analyses, can probably be attributed to the more open condition of the fibers resulting in a greater response to the drafting operations and hence greater uniformity in fiber distribution. The appearances of the yarns show no appreciable differences.

To ascertain the effects of different speeds on the cost at the card, quantities of licker-in fly, flat strips, and cylinder strips resulting from each speed test were sampled and their relative values fixed by a trade authority. While the values of the strips remain constant, the values of the licker-in fly fluctuate on account of the variations in dirt content and staple, as follows: 286 r.p.m., ½d. (½ penny); 309 r.p.m., ½d; 358 r.p.m., 1d.; 408 r.p.m., 1d.; 420 r.p.m., 1½d.; 494 r.p.m., 1¾d.; 570 r.p.m., 2d.; and 694 r.p.m., 2d. Assuming cotton at the finisher lap to be 15.2d. per lb. (May 30, 1930) [21.3 cents on exchange basis of $3.36 to the British pound], Table II shows the resultant costs at the card at the different speeds. The cost calculation follows:

Sample at 408 *R.P.M.*

Losses:	Flat Strip.....	1·39 lb. (per cent) @ 7½d.	= 10.42d.
	Cylinder Strip.....	3·91 lb. (per cent) @ 8½d.	= 33.24d.
	Licker-in Fly.....	1·02 lb. (per cent) @ 1 d.	= 1.02d.
	Total.....	6·32	44.68d.

Weight put through = 100 lb. @ 15·2d. per lb.
Loss ..... = 6·32 lb.
93·68 lb. @ 15·2d. per lb. = 1,423·94d.
Waste value = 44·68d.
1,468·62d.

Material loss per lb. (15.2 — 14.686) = 0·514d.

It is clear then that higher licker-in speeds are accompanied by higher costs, largely owing to the loss of good cotton in the licker-in fly. This disadvantage might be overcome by suitable modifications of the encasement, and it is proposed so to extend the investigations.

Wool Advisory Board

SHOULD REMAIN ADVISORY

SAYS COMMITTEE ON SCOPE

The Advisory Committee of the Wool Industry "will achieve its greatest objective if it remains advisory," in the opinion of its Committee on Scope which submitted a report at a meeting in New York Nov. 15. It was the further opinion of the Committee on Scope that the Advisory Board could be helpful "in bringing together for mutual consideration of all organizations within the industry, such general questions as promotional effort, anti-trust legislation and other matters of a similar character affecting all of the industry." To that end, it analyzed briefly six such subjects. In addition to receiving this report, the meeting heard frank remarks from Col. Charles F. H. Johnson, chairman of the Advisory Committee, who criticized the attitude of apathy and self-satisfaction which he has encountered among wool manufacturers. "When practically every industry existent is bending its efforts toward promotional work that will insure a better and wider distribution of its products," he said, "we, as an industry, sit still, apparently thoroughly satisfied with ourselves, and our market is being taken away from us like candy from a helpless child." The report of the Committee on Scope follows, in part:

WE BELIEVE the industry does not desire to set up another trade organization with large personnel and offices or to create expensive bureaus of a permanent character.

Your committee recommends that the activities of the Advisory Committee be exactly what its name implies, having the benefit of the best thought within the industry, with leaders of the industry serving on the Advisory Committee and passing upon questions of inter-industry interest. Each existing organization within the industry should function for its own group and be interfered with as little as possible.

Your committee feels that the strength of the individual organizations can be accomplished by a greater interest of the rank and file of the industry supporting their own organization, not only financially but with their thought and time.

The Advisory Committee can be helpful in bringing together for mutual consideration of all organizations within the industry, such general questions as promotional effort, anti-trust legislation and other matters of a similar character affecting all of the industry. It should, at the instance of a member or group, act on recommendations presented or initiate action approved by a majority.

The matters which have been referred to us and which stand out are:

1. *Anti-Trust Legislation:* It is strongly recommended that the Advisory Committee propose to each organization the naming of one man, as a part of a special committee for the express purpose of supporting the efforts of Mr. Whitman and others working on this question.

2. *Research and All That it Implies:* We believe encouragement should be given the individual units that are now making comprehensive efforts in this direction. Interference with the program of the National Association of Wool Manufacturers and others would, at this time, be inimical to the best interests of the industry. Coordination of the various efforts may be wise but action should only be taken if desired by those who are now working independently. Research entails expenditure of money which it would be difficult for your committee to finance and your committee suggests that any action of the Advisory Committee be rather in the form of supporting and encouraging existing programs.

3. *Promotional Efforts.* The industry has here a wide field and one which has not been cultivated as it should be. Promotional activity as exemplified by the work of the Wool Week Committee of a year ago can best be carried forward by a continuance of that committee. It has, therefore, been suggested by many that the Wool Week Committee go ahead, ask for the necessary funds to carry on a program of a second Wool Week. It is strongly recommended that each association within the industry do everything within its power to strengthen the position of the Wool Week Committee, not only financially but by personal effort and that each association contact its own membership promptly recommending support of Wool Week. Your committee in the meantime has requested the Wool Week Committee to take steps toward a 1932 Wool Week.

4. *Trade Practices:* This appears to be one function where the Advisory Committee may be particularly well adapted to be helpful. It is suggested that a subcommittee be appointed to discuss with the various unit organizations those trade practices that are inimical. Where such practices affect more than one unit of the industry, such should be brought together to formulate a constructive program. Under this particular heading come various questions, such as prices, terms, cancellations, questions of contract, insistence on firm orders and many others.

5. *Better Understanding Within the Industry:* A study of this topic will avoid many of the ills from which the industry suffers because various units of the industry fail to comprehend that some of the problems with which they are confronted are mutual, that is, are also met by other branches of the industry and, therefore, in the past have rarely talked them over together. Hence, it is believed that the Advisory Committee can prove helpful in bringing together such groups for discussion without making the meetings general.

6. *Statistics.* The National Association of Wool Manufacturers with the cooperation of the University of Pennsylvania and various other agencies has begun a statistical study which should not be discouraged by setting up still another body for the same purpose. The suggestion is made, however, that the Department of Commerce and the Department of Agriculture be asked to cooperate and try to give the industry more accurate figures of monthly wool consumption and production; that the National Association of Wool Manufacturers be encouraged to carry on this work, and that other branches of the industry which may benefit by such data be requested to contribute to the cost.

In making these recommendations an effort has been made to avoid details of controversial questions and your committee has treated the whole question of scope in its broadest aspect. It feels that if the Advisory Committee cannot have within its membership the most representative active men of each group, there will be no value in permanent organization.

The failure of most organizations, study reveals, is that those who should be most interested permit policies to be formulated by men whose dollars are not affected. We must, as individuals, find sufficient time to devote to our mutual problems or accept losses through lack of constructive cooperative action. The Advisory Committee will achieve, in our judgment, its greatest objective if it remains Advisory.

Break Draft

A NEGLECTED DETAIL OF COTTON SPINNING

By Alfred K. Landau

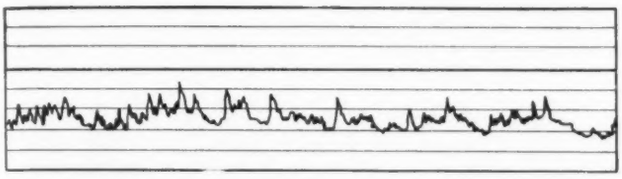


Fig. 1. Roving producing this test chart will make good yarn. Defective roving cannot be corrected in spinning by adjustment of break draft or other details.

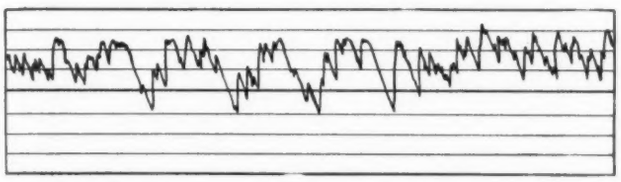


Fig. 2. Frame producing this roving evidently needs attention. Excessive twist has been used to compensate for unbalanced flyers and other fly-frame defects.

MANUFACTURERS are often perplexed at the wide variance in yarn characteristics present in the same count and description of yarn produced from the same grade and character of cotton by different mills in the same locality. It is sometimes hard to explain why these same yarns vary greatly, not only in regard to the strength, luster, evenness, and general appearance, but in the cost of manufacture and the production per spindle. In looking into this situation, it has been found that, while the organizations of many mills producing the same yarns do not vary greatly, yet when the details of drafts, speeds, and settings are examined, many differences are quickly located.

Many mill men regard break draft, for example, as a necessary evil; and it is only within the past several years that much attention has been given to this important section of the drafting operation. For a long time all makes of spinning frames were constructed with a break draft approximately 1.08 as standard. Investigations of late years have demonstrated that a draft of this intensity is now more than a tension draft. It has been found that roving of medium weight can be stretched as much as 2% without any positive displacement of the fibers. Without this displacement it is quite impossible to remove the twist from the strand of roving and thus unlock the fibers and put them in a condition for further drafting.

In order to make this clear, break draft can be defined as the drafting action which may occur between the back rollers and the following nipping point. In a set of drafting rolls the set distance in which this drafting occurs is usually considerably in excess of the longest fiber in the strand so that the fiber control which exists is due principally to the combining effect of the twist and the resulting surface friction as the fibers resist drafting.

It is hardly possible to discuss in a limited space all phases of this question, but the desired conditions may be accurately yet briefly summarized in their important aspects.

1. If the surface speed of the second roll from the back is less than 5% more than the surface speed of the back or feeding-in roll, it is highly probable that there is no fiber displacement which causes the unlocking of the fibers, and thus there is no definite break draft.

2. The condition of the roll surfaces has a definite effect on the break draft. If the rollers used in the middle and back rolls have been worn out in service in the front line, or if they have been grooved by hard ends, or if the fiber-gripping texture of the surface has been destroyed by oil or long use, an excess speed of 10% may not be effective in producing a definite unlocking of the fibers.

To obtain the best results it is, therefore, necessary to have a difference in surface speed ranging from 1.1 to 1.3, together with rolls capable of gripping the fibers firmly without the possibility of the roving pulling through, or the roll slipping, due to the retarding action brought by the resistance of the fibers to displacement.

Many variations in yarn numbers go unexplained, the origin remaining a mystery because the operating executives fail to recognize the importance of good rolls in the back and middle lines of roving and spinning frames. Some mills recognize this situation and, instead of a sporadic replacement of rolls in the back and middle line, make it a practice to change all their rolls in each spinning frame or speeder at least once a year on a 55-hour-week operating schedule. It can be confidently stated that a roll which is not fit to be used in the front line is not fit to be used in the middle or back line.

In general, short cotton and coarse roving require more break draft than longer cotton and fine roving, the reason being that the short cottons require more twist to obtain the necessary strength and cohesion to resist stretch while unwinding.

As has been said in the beginning, many mill men regard break draft as a necessary evil. It may under certain conditions produce irregularities in the strand of cotton before the strand reaches the main drafting element, but an adequate and definite break draft properly adjusted to the weight of the roving and the count of the cotton is an important factor in obtaining strength and evenness in yarn.

Although many suggestions may be made for improving the operation of the spinning frame, it must be remembered that the basis of good yarns is, beyond any dispute, good roving. By "good roving" we mean roving with the fibers well laid and parallel, with no lumps or thick and thin places, and with just that definite amount of twist which will permit the unwinding of the strand without stretch or distortion. (See Figs. 1 and 2.)

ACID DEGUMMING DEEMED ADVISABLE FOR

Silk-Wool Unions

By H. H. Mosher
Chief Chemist, United States Testing Co., Inc.

IN LAST month's issue of TEXTILE WORLD the author showed that usual degumming methods prove harmful to silk-wool unions and that superior results should attend a modification of the drastic alkaline boil-off operation which is commonly employed. He pointed out also that on the pH scale two bands of efficient degumming occur: an alkaline plateau between pH 9.5 and 10.5, and an acidic sector between values of 1.5 and 2. Although it is generally believed that acids have little or no deteriorating action on wool, little accurate information is available on this subject, or indeed, on the influence of alkaline solutions at those temperatures required for effective sericin removal. Therefore in considering means of improving the existing methods of stripping unions composed of silk and woolen or worsted, it was decided to investigate first the influence of time, temperature, and the pH of the scouring liquor on the tensile strength, color, and dyeing properties of the wool.

Worsted yarns of 2/40 size were selected as the media for these tests. These had been derived from a high quality of Australian wool and had been scoured in fleece form in the conventional manner and oiled with a commercial quality of cottonseed oil before processing.

TABLE I. Influence of pH on the tensile strength of wool

Chemicals Used	pH	Tensile Strength in Lb. Original	After 30 Min.	After 60 Min.	After 120 Min.
0.25% Hydrochloric acid trace Potassium phthalate	1.50	158	147	144	138
0.3% Oxalic acid	1.88	158	148	146	140
0.5% Tartaric acid	2.21	158	149	145	143
0.5% Acetic acid	3.84	158	149	146	144
Distilled water	6.62	158	141	138	131
1% Triethanolamine oleate	7.84	158	133	129	120
1% Olive-oil soap adjusted to pH 9.0 by hydrochloric acid	9.04	158	126	119	108
1% Olive-oil soap adjusted to pH 9.5 by hydrochloric acid	9.48	158	118	112	101
1% Olive-oil soap	10.18	158	110	102	88
1% Olive-oil soap plus ¼% soda ash	10.88	158	71	61	37
1% Olive-oil soap plus ¼% sodium hydroxide	11.82	158	Disintegrated		

Material employed, 2/40 worsted yarn; temperature, 100° C.; ratio of wool to solution, 1 to 50.

TABLE II. Influence of temperature on tensile strength of wool.

Temperature, Deg. C.	Time, Min.	Tensile Strength in Lb. pH 9	pH 9.5	pH 10.2
60	30	152	150	148
60	60	151	147	147
60	120	150	146	145
80	30	141	138	135
80	60	139	136	132
80	120	135	131	125
90	30	130	127	120
90	60	128	125	116
90	120	120	117	108
100	30	125	117	107
100	60	120	112	101
100	120	111	104	92

Material employed, 2/40 worsted yarn; original strength, 158 lb.; chemicals to produce indicated pH, same as given in Table I; ratio of wool to solution, 1 to 50.

Tensile Strength

Skeins composed of 90 threads each were prepared. These were exposed to the action of solutions of varying pH values at temperatures ranging from 60° to 100° C. and for time intervals from 30 to 120 min. The ratio of wool to solution was in all cases affixed at 1 to 50, and the pH of the liquor at all times maintained a constant throughout the operation. This was accomplished by periodically adding predetermined amounts of acid or alkali in order to maintain the initial pH value.

The skeins were in all cases conditioned 48 hr. at a temperature of 70° F. and a relative humidity of 78% before being tested. Yarn strength was determined in the conventional manner on the Scott machine, in which a 90-thread skein was affixed between jaws 4 in. apart and a jaw speed of 12 in. per minute maintained. All tests recorded below are the mean of ten breaks each. In Tables I and II and Fig. 1 are shown the influence of pH and temperature on the tensile strength of worsted yarns. In Fig. 2 is indicated the influence of time of treatment on the breaking strength.

Dyestuff Affinity

Perhaps of as much importance from a manufacturer's standpoint as the loss of wool strength by temperature and alkalinity is the simultaneous development of wool discoloration and changes in the coefficient of dyestuff adsorption by the fibers.

In order to determine the effect of alkaline degumming on the affinity of wool for dyestuffs, and simultaneously secure information on the influence of elevated scouring temperatures upon the color and handle of treated wool, worsted skeins were prepared and boiled-off in solutions varying in pH from 1.5 to 11. The time of boil-off was affixed at 2 hr. and the temperature ranged from 50° C. to the boil. No instruments for quantitatively estimating the hand of fibers exist to the best of the writer's knowledge; therefore this quality was judged by three textile authorities. The color of the scoured worsted yarns was judged by visual inspection.

It was found that with increases in temperature the wool acquired a yellow cast and simultaneously developed a lean yarn and harsh unpleasant tactile impression. It was further noted that the extent of these adverse developments followed rather closely the losses in tensile strength and that very decided differences in both the color and hand of the wool boiled off at pH values as close as 9.5 and 10 could be discerned.

Subsequent to the inspection after boil-off, the skeins were acidified in very dilute acetic acid (0.2%) in order that all samples might be brought to the same degree of

acidity, washed, and introduced into the same dyebath. The dyestuff employed was Fast Fuchsine Red and the auxiliaries were glauber salt and acetic acid. The pH of the solution was adjusted and maintained at 3.8 throughout the dyeing operation by periodic predetermined additions of acetic acid. The initial dyeing temperature was affixed at 100° F. and was increased gradually to 200° F., the rate of increase being so adjusted that 15 min. was required in order to produce a rise of 10°. Skeins from each boil-off lot were removed from the bath at temperatures of 140, 160, 170, 180, 190, and 200° F.; washed; dried; and examined for color.

It was found that the scouring solutions and their temperatures exercised a surprising influence upon the final color of the dyed wool. The temperature of an acid scouring bath was found to be almost without influence on the dyeing properties of wool. The coefficient of absorption of colors by wool, however, was found to be influenced markedly by the alkalinity and temperature of the preliminary scouring solutions. When this liquor was maintained below 160° F., the effect was not marked regardless of pH. At about this temperature, the alkalinity was found to produce some chemical influence on the wool molecules and this became increasingly accentuated with increases either in basicity or temperature.

Thus, while wool scoured in acid or neutral solutions at any temperature did not absorb much color from the dyebath at 140° F., and only a moderate amount at 170° F., that scoured in boiling soap solutions had acquired almost its maximum color intensity at the latter figure and considerably more than that acquired by wool washed in the conventional manner even when dyed at the boil.

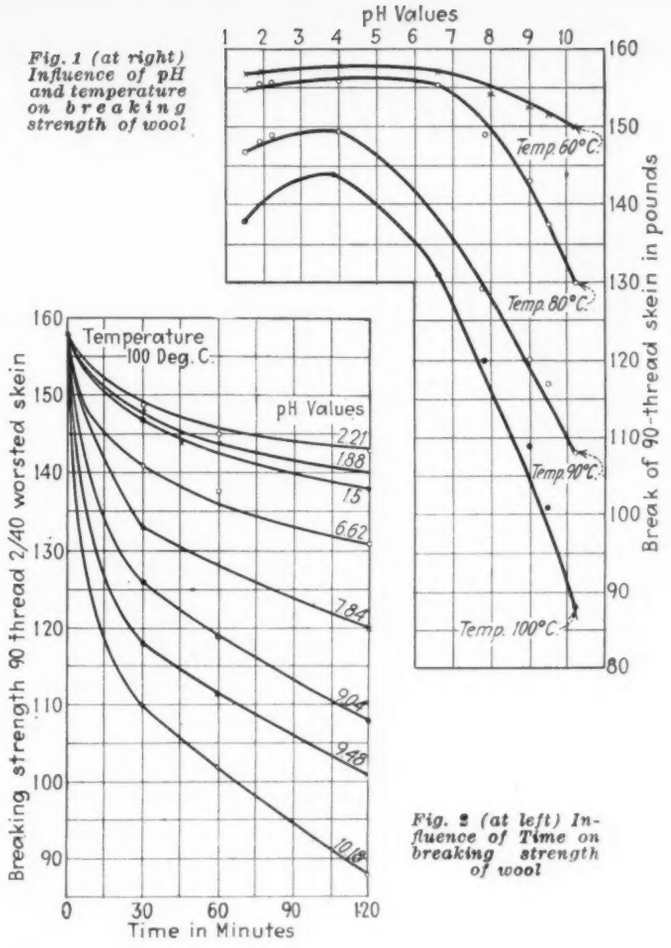


Fig. 1 (at right) Influence of pH and temperature on breaking strength of wool

Fig. 2 (at left) Influence of Time on breaking strength of wool

This enhanced affinity was found a variable, depending upon both basicity and temperature of the stripping bath; and the higher each, the greater the increase. Distinct color differences could be detected on skeins of wool yarn dyed in the same dyebath but previously scoured in liquors with pH values as close as 9.5 and 10 or in temperatures varying no more than 10° C.

Modified Procedure

It would appear that by exercising greater care in the stripping of gum silk, woolen or worsted unions, a considerable portion of the strength losses and discoloration of the wool ordinarily experienced in boil-off might be avoided. Such combinations are ordinarily degummed in "skein" form on sticks in solutions containing between 1 and 2% of olive-oil soap at or just under the boil. Such liquors generally have pH values at least as high as 10.2, although this varies with the dyehouse and may reach a figure of 10.8. Usually a 2-hr. treatment is required to effect complete degumming. During stripping, the alkalinity of the solution is reduced due to reactions between the fibroin and sericin and the hydroxyl ions of the soap, with the result that the final pH of the liquor is seldom higher than 9.7, and between the folds of the cloth being stripped several fractional pH units lower. That fact is important.

The interior portions of the cloth are seldom exposed to as high an alkalinity as the more exposed parts of the merchandise. Unless the cloth is very vigorously agitated, the liquor passes through the cloth folds rather slowly and in passing is partially neutralized and buffered by the silk fibroin and sericin, with the result that the solution between the folds is less basic than that in contact with the more exposed portions of the cloth. Sufficient variations in the basicity to which the interior and external layers of the cloth may be subject in the boil-off bath exist in most dyehouses to account for the mottled appearance of many dyed silk-wool combinations.

In order to confirm the practicability of employing a lower temperature and pH value under operative conditions, two lots of Bengalene of sixteen 60-yd. pieces each were degummed. One lot was stripped in the conventional manner in a fresh 2% olive-oil soap solution for 2 hr. at 100° C. The companion sample was stripped in the same boil-off bath buffered to pH 9.5 by previously using the solution for other lots of silk. The time of "boiling" was affixed at 2 hr. and the solution maintained at 90° C. throughout the operation. The pieces stripped at the lower temperature were of better color and had a much superior hand to those degummed at the boil. Swatches were removed from pieces of each lot and tested for strength. It was found that the wool portions of the samples stripped at the lower temperature were 77% stronger.

Even under the most favorable conditions of procedure, however, an alkaline process of stripping gum silk-wool unions is very inimical to the wool. Therefore further modification in boil-off procedure is desirable to prevent losses in wool strength and other adverse developments. The data recorded indicate that acids may be utilized to advantage in effecting either a whole or partial gum removal, and the development of an acidic method of degumming is deemed advisable. Results of work along this line will be reported in the near future.

Textile Engineers

DISCUSS DYE COSTS, PEROXIDE BLEACH, AND MACHINERY PROGRESS

DISCUSSION of cost elements in dyeing cotton piece goods, the bleaching of textiles with peroxide, and the year's progress in textile manufacturing and processing featured the annual meeting of the textile division of the American Society of Mechanical Engineers, held in New York, on Dec. 7. J. Andrew Clark, chief chemist, Dutchess Bleachery, led the discussion on dyeing costs and H. G. Smolens, of Buffalo Electro Chemical Co., Inc., that on peroxide bleaching. The annual progress report of the division was presented by W. L. Conrad, consulting engineer.

After outlining the various processes to which cotton fabrics are subjected in the finishing plant, Mr. Clark cited representative cost figures for labor and materials for producing commercial, sunfast, tubfast, perspiration-proof and vat dyeings. A summary of these figures, which it was pointed out represent only average conditions and do not take into account the material used in finishing, is given in the accompanying table.

In a written discussion of Mr. Clark's paper, Winn W. Chase, assistant editor, TEXTILE WORLD, brought out the fact that since the items of labor and material comprise only 50% of the total cost of processing cotton piece goods, it is essential that overhead be properly allocated if one is to get a true picture of costs. The machine-time system of cost-finding is particularly applicable to finishing plant operations and is advocated as a standard method for the dyeing, printing and finishing industry.

On peroxide bleaching, Mr. Smolens stated, in brief:

At present wool is bleached with peroxide in the following forms: raw stock, top, yarn, piece goods, knit goods, and felts. Silk is peroxide bleached as yarn, piece goods, knit goods and hosiery. Rayon bleaching with peroxides is still in the embryo state. Practically all of the rayon used in textile manufacture comes from the producer already more or less bleached, so that it can be dyed without further bleaching. Until very recently, the manufacturers of rayon yarns have not been at all interested in peroxide bleaching. Lately, however, one of the larger producers of viscose-type yarn has been, by a peculiar combination of circumstances, reported to be bleaching his entire production with peroxide. Now the other rayon manufacturers are beginning to show a few signs of interest, especially as there are being developed machines for desulphurizing and bleaching rayon in the original cake. Cotton is peroxide bleached as raw stock, yarn, piece goods, knit goods and hosiery.

"A great amount of experimentation is now going on with the object of reducing the cost of peroxide bleaching. In the meantime more is becoming known, almost daily, about the construction materials and operating equipment most desirable for peroxide bleaching. Many improvements, some of them quite revolutionary in their scope and results, are being made in the technique of peroxide bleaching. These should be available to the trade during the next year."

The paper compiled by the progress report committee, of which Mr. Conrad is chairman, stated in part:

"Textile-machinery builders have been greatly improving and standardizing their products and developing new mechanisms and processes that have materially benefited in the industry. In fact, this has been carried on to an extent not before witnessed in 25 years.

"Much progress has been made in scrapping obsolete mills and mechanisms, as well as the processes themselves, and much more remains to be accomplished. Such buildings as have been erected have been mostly small additions to existing textile mills, and little of new design or construction has been noticed, but the new machinery and processes that have been developed require very little actual floor space as compared with the old methods.

"An important trend that apparently will terminate in a most satisfactory condition is the seeming willingness now of the actual leaders of the textile industry to meet and discuss their several problems, whereas in the past this has been difficult to accomplish. And it is earnestly hoped that during the coming year the engineering executives connected in any way with the textile industry may make it possible to bring into a still more closely knit group the textile executives of every branch of the industry so that the basic problems of machinery, development, policies, and processes may be more thoroughly discussed and worked out. There is every evidence that most of these problems now so jealously guarded by the several branches of the industry are in reality only problems common to the industry as a whole when viewed by the impartial technically trained engineer."

The progress report concluded with a summary of the innovations and improvements made in textile equipment during the last twelve months.

Cost of labor and materials for dyeing cotton piece goods

Class of Color	Dyehouse Base	Other Operations	Total Base Cost
Commercial:			
Jig	$0.00321	$0.00609	$0.00930
Pad	0.000256	0.00609	0.00635
Sunfast	0.01041	0.00609	0.0165
After-treated commercial	0.00388	0.00609	0.00997
Tub-fast:			
Diazo	0.00694	0.00609	0.01303
Sulphur	0.00507	0.00609	0.01116
Perspiration-proof			
Vat colors:			
Vat	0.02118	0.00609	0.02727
Naphthol	0.01343	0.00609	0.01952

Aromatics

FIND INCREASING USE FOR REODORIZING TEXTILES

FOR many years means were sought to counteract the unpleasant odors which are characteristic of various textiles; but little worth-while progress was made in this direction until the synthetic aromatic compounds for reodorizing or perfuming textile materials were introduced. In the comparatively short time which has elapsed since they were first put on the market, the aromatics have found use in finishing many types of merchandise. While it is too soon to evaluate fully the importance of these new finishing aids, it is certain that they merit the careful consideration of the textile manufacturer and finisher. In this article, therefore, we shall outline briefly the characteristics, methods of application, and uses of the aromatics.

Chemically, the aromatics are found in practically all classes of organic compounds. Some are derived from benzene, others from naphthalene; some are of an aliphatic nature, others are alicyclic compounds. It is due to the fact that many of these substances are odorous that the word "aromatic" came into use as a generic term for this class of compounds. Typical of the better-known aromatics which have been used for some time in other industries are phenylethyl alcohol and alpha amyl cinnamic aldehyde.

Recent Developments

The practice of deodorizing has been followed in the manufacture of laundry soap for more than 20 years; and today nobody would think of trying to sell a laundry soap which is not deodorized, although this is a commodity much lower in price than are manufactured textiles. More recently it has been discovered that a number of the aromatics are particularly suitable for use on textiles, and these are now being offered under various trade names. It is interesting to note in this connection that some years ago the largest manufacturer of aromatics for the soap industry undertook to test each individual aromatic as to its affinity for the fiber—animal and vegetable—and to determine any other influence it might have on textiles. From extensive research of this type have been evolved the aromatic compounds which are now employed for reodorizing textiles.

Among the scents available to the textile industry are included carnation, rose, jasmine, and new-mown hay. There have been developed also compounds for treating special types of fabric. Examples of these are one which imparts a real leather odor to artificial leather, and another which gives the peat-smoke odor associated with Harris tweeds.

Aromatics may be employed on textiles merely to counteract any unpleasant smell which may be in the goods when first finished or which may develop during storage or use; to impart a faint pleasant odor; or actually to perfume the material. For such items as hosiery, underwear, blankets, raincoats, etc., it appears preferable to use one of the so-called neutralizing aromatics which impart no perceptible odor, or at most, one of the compounds which give a very faint aroma. This is true also of velvets, broadsilks, woolen and worsted suitings and coatings, and many other fabrics.

Artificial leather, mentioned previously, is an example of the type of product which may be treated to advantage with one of the compounds which impart a noticeable characteristic odor. Another use of the aromatics which give a perceptible odor is for the identification of a particular brand or make of merchandise. Thus, one of the first textile uses of an aromatic was in the treatment of mercerized cotton yarn with a fugitive scent which would not be apparent in the finished fabrics or garments.

Method of Application

Application of the aromatics brings no new problems to the dyer or finisher. As a rule, small quantities are added to the finishing oil, etc., without further modification of the formula or process. This method not only obviates any extra operation, but also gives uniformity of odor. Since the aromatics withstand heat, the textiles can be finished and dried in the usual manner. A characteristic of the aromatic compounds, other than their reodorizing property, is that they act as stabilizers, and therefore to a certain degree prevent the development of rancidity in the finishing oils or softeners with which the goods have been treated. On the other hand, they are neutral in reaction; and hence have no injurious effect on the fibers.

The amount of aromatic required for reodorizing textiles is comparatively small. Thus, for broad silks and hosiery 1 to 2 lb. of the aromatic compound is usually sufficient for treating 10,000 lb. of goods; and for rubberized materials, 1 lb. to 1,000 lb. of fabric. The cost of reodorizing seldom totals over a small fraction of a cent per yard in the case of woven fabrics or per dozen pairs in the case of hosiery.

While, with certain exceptions, there seems little likelihood of any great consumer demand for highly perfumed textiles, an unpleasant smell is a decided detriment to the sale of many types of merchandise. On the other hand, there is an increasing emphasis on textiles which have a clean agreeable odor. This being so, reodorizing is passing rapidly from the experimental or novelty stage, and bids fair to become standard practice for a wide variety of textile products.

Sales and Records

AT B.Z.B. GO HAND IN HAND

Convenient records aid the sales manager

◆ *Today, more acutely than ever before, the forward-looking textile executive realizes the need for accurate cost and sales data. In our September issue we described the type of records kept at B. Z. B. Knitting Co. to make certain that the minimum of sales effort and expense will be expended on those unprofitable styles which a mill often finds it necessary to carry in order to reach certain customers. The accompanying article discusses the record system which this company finds useful for stimulating sales of profitable lines. The forms employed and interpretation of the information recorded on them are here described.*

THREE lean years have taught the value of accurate records to all branches of industry. The selling branch is no exception. Never before has there been such an acute need for informative sales data. Our company has found that its sales records constitute one of the most important factors in determining a well-balanced sales policy. Until a year ago, we had no adequate system of sales records. Our previous system of records, at its best, was hopelessly inefficient in telling an accurate story of all the steps to be taken to increase sales. And that, after all, is the real purpose of well-kept sales data.

Our present installation of sales records is doing an effective job for us in aiding the sales manager to direct his salesmen on the road and in showing the degree of their efficiency. We can tell at a glance what, where, and why certain territories offer better sales possibilities than others. We know where we can best concentrate our selling efforts so as to develop lucrative fields. These records tell us what districts need bolstering up with well-planned salesmanship. Knowing this, we can more intelligently develop a sales policy to fit the territory we desire to build up.

System Followed

At the top of the customer's sales-record card shown in Fig. 1 is space for recording the customer's firm name, his location, salesman, buyer, and any special packing instructions that the customer may wish. In the space captioned "remarks," information is entered pertinent to the standing of the customer. On the body of the card are spaces for recording style number, quantity, and price. At the right is a column for totaling the number of dozens by styles, indicating the most profitable and popular lines.

To supplement the customer's sales record, we keep a correlated record, which we call the flag system. From this record we get our most valuable information. These records tend to help us in determining our sales policy in regard to certain localities and customers. Small celluloid strips called "flags" make possible instantaneous knowledge of all important facts relating to any sale. They tell the date of salesman's call on customer, amount of sales, if any, and the growth or retrogression of the account. They also show to what percentage a customer is purchasing in reference to sales made during the previous year to that same customer.

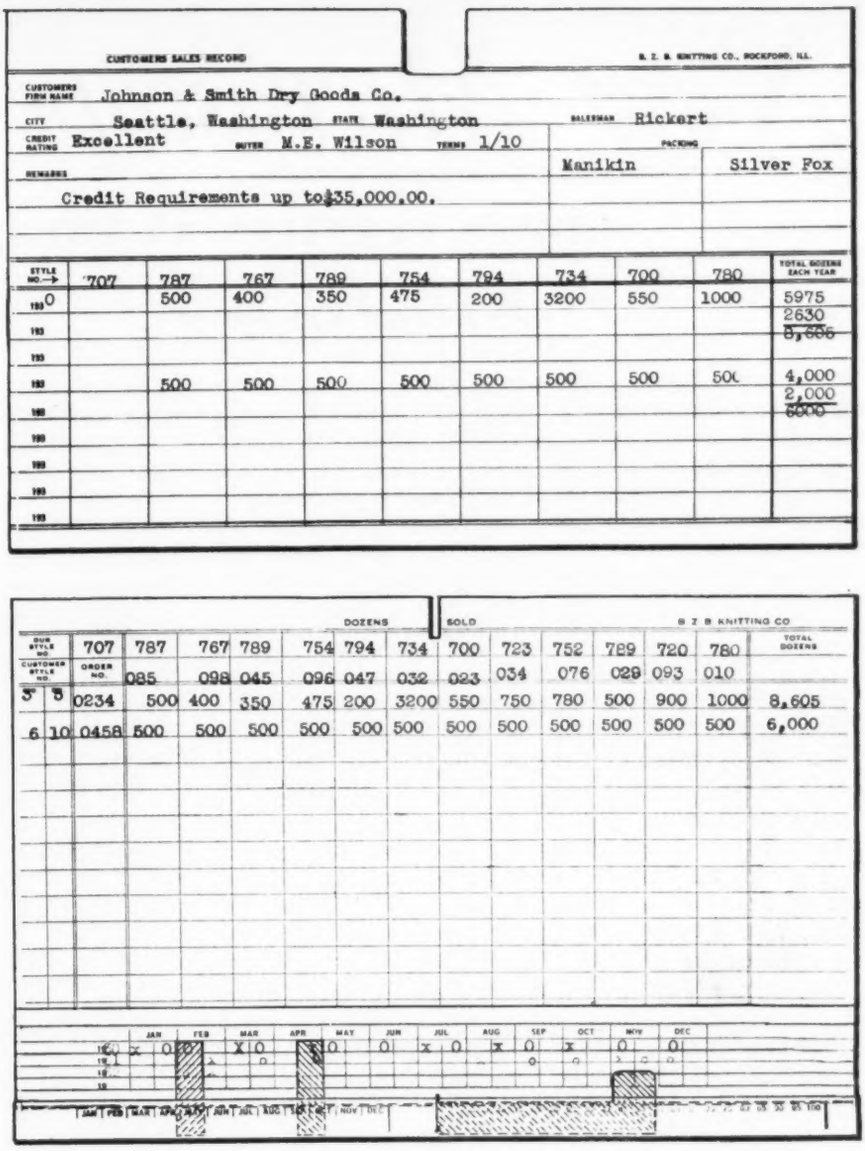
Has Immense Value

Obviously then, this is of immense value, because it tells what to do to get more business from that

By C. L. St. Clair

Office Manager and Accountant, B.Z.B. Knitting Co.

As told to Norris Linscott



CUSTOMERS SALES RECORD — B. Z. B. KNITTING CO., ROCKFORD, ILL.

CUSTOMERS FIRM NAME: Johnson & Smith Dry Goods Co.

CITY: Seattle, Washington STATE: Washington SALESMAN: Rickert

CREDIT RATING: Excellent BUYER: M.E. Wilson TERMS: 1/10 PACKING: Manikin / Silver Fox

REMARKS: Credit Requirements up to $35,000.00.

STYLE NO. →	707	787	767	789	754	794	734	700	780	TOTAL DOZENS EACH YEAR
1930		500	400	350	475	200	3200	550	1000	5975
										2630
										~~8,605~~
1931		500	500	500	500	500	500	500	500	4,000
										2,000
										~~6000~~
1932										
1933										
1934										
1935										

DOZENS SOLD — B Z B KNITTING CO

OUR STYLE NO.	CUSTOMER STYLE NO.	ORDER NO.	707	787	767	789	754	794	734	700	723	752	729	720	780	TOTAL DOZENS
				085	098	045	096	047	032	023	034	076	029	093	010	
3	8	0234	500	400	350	475	200	3200	550	750	780	500	900	1000	8,605	
6	10	0458	500	500	500	500	500	500	500	500	500	500	500	500	6,000	

JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Fig. 1. Forms used for keeping B.Z.B. sales records

account. We also know whether our lines are satisfactory in regard to prices and styles. It enables us to tell the approximate percentage of his total requirements that we are getting. This is considered important, because when we find that we are getting only a small percentage of his requirements, our sales department analyzes the trouble and endeavors to correct it if possible.

Timely Information

In regard to the salesmen, we find that our system gives fairly complete and timely information. It is a check-up on each salesman and tells us if he is on the job. We know when he called last, his results, and whether or not the call netted an adequate return. Selling waste is cut down materially, but sales waste, in many cases, cannot be eliminated. Some accounts demand certain attention over which we have no control. However, by directing our attention and catering to those accounts that have certain requirements to be met, we create good will.

Through our knowledge of his particular case, the customer receives better service. Naturally, the impression that we have a personal interest in his business will often cause him to give us repeat orders, which are the least expensive to get. In normal times, sales should show, to some extent at least, how much business is possible with certain customers and should suggest ways in which to go about getting more of the available business.

The record shown here has spaces for style number, order number, etc., and down below the "flags." Records of four years can be accommodated on this slip. The letter *O* indicates an order, and an *X* shows a salesman's call. The upper line of months indicates when those orders and calls were made. The lower row of months indicates sales and calls so far this year. The long horizontal strip shows the percentage that the customer has bought this year in comparison to the amount of buying done in previous years.

We classify our records first by states, then by cities. Customer's firm name is listed alphabetically by city. We know immediately just how many customers we have in any given territory, the extent of their credit, and whether they buy by mail or through our salesmen. These records indicate, by the number and location of the flags, just how much time and effort was put forth to close every transaction.

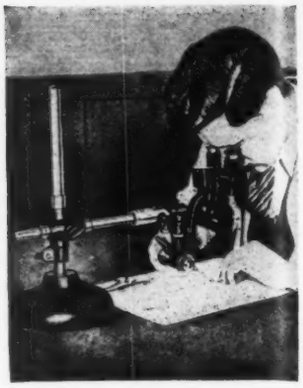
Credit Extension Controlled

These statistics aid and control the prevention of losses through the extension of too much credit. Should a customer begin buying in abnormal quantities, we would ascertain the reason before allowing too much credit, fearing that he was buying for a break. If the buying on the part of the customer was due to a sales campaign or to the discarding of a competitor's goods in favor of ours, well and good. By checking over his previous orders, his normal buying power could be easily ascertained.

We have found that by the use of these records, it has been possible to curtail selling expense, control credit, and aid in the planning of effective sales campaigns, such as we are now engaged in putting across.

New Microscope

SHOWS TEXTILES AS THEY ARE



By Edward R. Schwarz

◆ *For the examination of fibers and yarns and as an aid in the analysis and synthesis of fabrics the stereoscopic microscope is almost indispensable. In the following article, which is abstracted from a paper read in Cambridge, Mass., at a meeting of the textile section, American Society of Mechanical Engineers, Professor Schwarz discusses some of the more recent improvements in this instrument and other microscopical equipment.*

UNTIL this year, an adequate examination of the surfaces of fibers has been practically impossible. Now, however, a new microscope allows detailed study of surface characteristics at even the highest practical magnification. Many markings, hitherto supposed to be pits or cracks, are found to be optical illusions.

The new technique calls for use of incident reflected, rather than transmitted light, and makes possible the production of stereo-micrographs which show clearly the structure of the specimen in three dimensions. Convolutions, channels, cells, fibrillæ, and the like can be shown in plastic relief. And, since fibers of different kinds differ in both major and minor details of structure, such analyses are of great value. In addition, the stereogram provides a powerful means of attack on problems of fabric analysis and synthesis.

Auxiliary apparatus has also been devised by the author for use in conjunction with either a simple camera equipped with a micro-tessar lens or else with the usual mono-objective compound microscope. These developments enable the textile analyst to obtain stereograms of such widely diversified subjects as a knitted sweater fabric or the spore head of a normally invisible fungus.

Modern fiber analysis by means of polarized light and the x-ray has demonstrated that many of the so-called common fibers are really very complex, both chemically and physically. The x-ray allows the investigator to step inside of the fiber and wander around among the atoms and molecules. The regular orientation of the atoms and molecules produces what we know as a fiber and gives regular diffraction patterns in a beam of x-rays. The same fact renders all textile fibers doubly refractive and thus makes the polarizing microscope a powerful weapon of attack on problems of structure. Further, the colors produced in normal and abnormal fibers are different and make for simple and rapid analysis and differentiation quantitatively.

Chemical treatment to swell a fiber until otherwise invisible details of structure can be seen has long been used. But satisfactory combinations of staining with this technique to render mechanical and other damage readily detectable is of recent origin. Still more recent is the use of pure cultures of certain bacteria which produce a pink mold or rot on wool, to reduce the fibers to their ultimate components without danger of injuring them.

One of the present researches in the textile microscopy laboratory, Massachusetts Institute of Technology, is the working out of a technique for the quantitative determination of the strains and stresses resulting from various deformations in individual fibers. Cross-sectional investigation of textile fibers is an increasingly fruitful field of endeavor, both for control of manufacturing processes and for the critical determination of the details of fiber structure.

A means for the measurement of single and ply twist in yarns which would give the values at as closely spaced or at as widely separated intervals as desired, and at the same time avoid damage or alteration of the yarn, would be extremely valuable. The writer has worked out such a technique and further development of it is now in progress. For single yarns, the results are believed to be superior to any other method. For plied yarns, the data are of most value for the determination of the arrangement of the units entering into the yarn, and for the quantitative determination of the degree of deformation, corkscrew, etc., which may exist. Further, the same technique yields information as to the amount of contraction due to plying. With these additional data it is possible to compute with reasonable precision the single yarn twist before plying.

If the micro-method is used in conjunction with the usual scheme of untwisting a plied yarn, much light can be thrown upon the deformations existing in normal and abnormal yarns. Not only is yarn analysis of interest and value, but the micro-analysis of fabric both from the standpoint of analysis and synthesis means much to the mill man. Since fabrics present non-planar surfaces for examination, the stereoscopic binocular microscope should be widely used.

Users of many fabrics recognize the fact that crimp is a vital item both in manufacture and use. With proper microscopic equipment the waviness in most fabrics can be measured just as it exists in the cloth.

While much effort is being directed to the devising of apparatus to measure thickness of fabric, it is recognized generally that any such device must be calibrated by means of the microscope. It is also realized that for the measurement of height of pile, etc., nothing is an adequate substitute for optical analysis.

Many fabrics are complex in structure. Carpets, lenos, lappets, swivels, braids, and laces, all yield to direct analysis by intelligent use of micro equipment. The micro-stereogram is capable of showing as a permanent record the surface characteristics of fabrics and yarns.

Cause of Barré

OFTEN ELUDES THE HOSIERY KNITTER

By Herbert C. Roberts

IN THE manufacture of crepe and grenadine hosiery, the knitter often encounters an imperfection for which no thoroughly satisfactory explanation can be given. One of the more common defects of this nature in silk hosiery is that known as barré.

The manner in which barré evidences itself in the stocking as it leaves the knitting machine is shown in Fig. 1. A puzzling feature of a fault of this character is that it is not known whether or not the barrè will disappear when the goods are boiled-off and dyed. In Fig. 2 is illustrated a portion of the stocking after boiling-off in the laboratory. In this case the barré effect has been removed. Many theories have been offered to explain the cause of this defect; some of them seem almost fanciful, while others appear to be practical explanations of the cause.

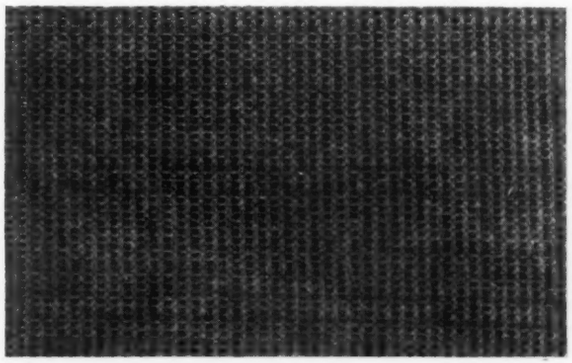


Fig. 1. Barré effect in stocking as it comes from the knitting machine

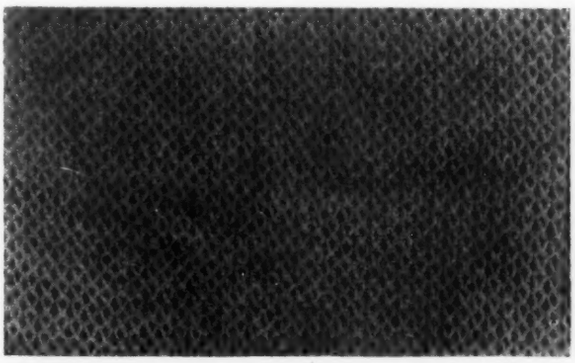


Fig. 2. Boiling-off of the stocking shown in Fig. 1 removed the barré

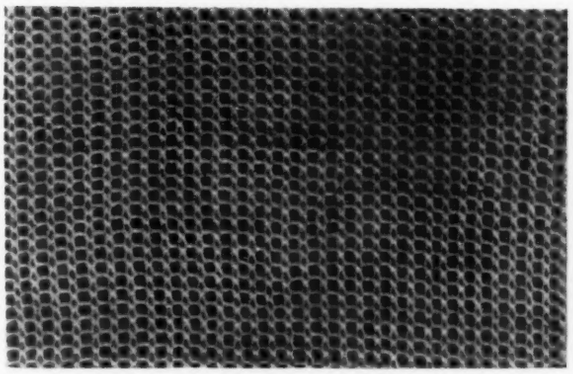


Fig. 3. Short barré mark caused by over-steaming of the silk

Most investigators agree that the barré effect originates in the winding and setting of the twist. It has been suggested that uneven tension on the coning machine, due to belt slippage or to fluctuation in electric current, may cause the defect. Some knitters call this a far-fetched explanation; while others believe it is a plausible one.

Attention also has been called to the fact that after the cones have been wound and thoroughly saturated with moisture in a humidifying cabinet, they are not put on the knitting machine at once. This allows a half an inch or more of yarn at the top and bottom of the cone to dry, while the main portion of the yarn is still thoroughly saturated. Knitting with silk part of which is dry and the rest moist is advanced as the cause of the defect. The writer believes that this may be the reason where the barré mark is only a fraction of an inch long in the knit goods, but that it hardly holds true when the barré persists for nearly a whole course. The variation in the length of the barré and the fact that the defect does not repeat at any regular interval make it difficult to determine the exact cause.

Thinking that variation in twist of the yarn might be responsible for the cause of the short shiny barré effect shown in Fig. 3, the writer unraveled the goods, and found that in portions there was a variation in twist of $2\frac{1}{2}$ turns. Peculiarly, the variation could not be tied up with the shiny places in the yarn. In this particular stocking it was noticed that wherever a shiny place occurred in the yarn, the threads were stuck together. In a 20-in. length of yarn, there might be one or two of the short barré marks. When the yarn was untwisted in twist counter and a pin was run down the yarn to ascertain whether all twist had been removed, it was found that unless considerable pressure was exerted, the pin would not separate the shiny sections.

Apparently, in steaming the silk, the steam was too wet and the bobbins were steamed too long. As a result, open and exposed parts of the silk were over-steamed, the gum started to dissolve, and on cooling cemented the threads together. It is quite possible that the portions which were heated too much were those near the iron heads of the bobbin, as these no doubt were hotter than the other parts of the bobbin.

All-Electric Jig

GIVES CONSTANT SPEED AND TENSION

◆ *One of the most recent developments in dyeing equipment is the all-electric jig. The following discussion of the operating principles of this machine and the results obtained with it is abstracted from a paper by C. E. Robinson, Reliance Electric & Engineering Co.; L. M. Start, Rice, Barton & Fales, Inc.; and B. M. Horter, Cutler-Hammer, Inc.; which was presented at a meeting of the textile section, American Society of Mechanical Engineers, held in Cambridge, Mass.*

IN DYEING cloth on a jig a large number of variable factors must be controlled in order that the finished article be of the proper shade throughout its length. The type of dye used, the concentration of the dye liquor, the temperature at which the liquor is maintained, the number of passes made by the cloth through the dye liquor, the speed at which the cloth travels through the bath, and the tension under which the cloth is wound all affect the ultimate result. The importance of these last two variables was not fully realized, however, until the advent of fabrics containing Celanese, viscose, etc.

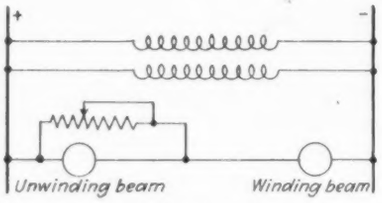


Fig. 1. Simplified line diagram illustrating principle of operation of all-electric jig

In attempting to dye these materials on the ordinary jig, it was found that stretching of the individual threads in the warp was apt to occur unless the operator continually adjusted the band brakes on the unwinding beam roll, in an effort to maintain a very low and fairly uniform tension. It was also found that in dyeing some of the more delicate shades, variations in the degree of color at different points along the length of the material were apt to occur because of the wide difference in cloth speed at various points in the process. Attempts to eliminate some of the hazards of dyeing and to enable the production of finished work of better quality at a substantially higher average speed have led to the development of the all-electric jig.

Operating Principles

In the all-electric jig, a small d-c. motor is geared to each of the two beam-roll shafts, and a substantially constant cloth speed and tension is automatically maintained by virtue of the manner in which the motors are connected. This is best demonstrated by means of the simple diagram shown in Fig. 1. Line voltage is maintained across the shunt fields of the two motors, and the armatures are connected in series and placed across the line, as shown. A variable resistance is connected across the armature terminals of the motor geared to the unwinding beam roll.

If the shunt field excitation of a d-c. motor is held at a constant value, as is the case here, the speed of the motor is directly proportional to the voltage impressed upon its armature terminals. If two motors have their armatures connected in series across the line, the voltage across one plus the voltage across the other must always equal the line voltage. Therefore the speed of one plus the speed of the other must always equal a constant total. The magnitude of this total would be the speed at which one motor would rotate if the other were held stationary. If we allow one motor to run at ¾ full speed, the other will operate at ¼ full speed, etc.

On the jig, as the winding roll increases in diameter, we wish to reduce the angular velocity in order to maintain a constant peripheral velocity. The unwinding roll will automatically increase in angular velocity as its diameter decreases, if the cloth speed is held constant. Thus, in our series connection, as the unwinding roll becomes smaller, it causes the motor attached to it to rotate at a higher speed. This speed subtracts from the speed of the motor connected to the winding roll, causing it to slow down.

At the beginning of a pass, we wish the winding roll of small diameter to operate at a high speed, and the unwinding roll of large diameter to operate at a low speed. The voltage across the winding motor armature will, therefore, be high and that across the unwinding motor armature will be low. As the diameter of the unwinding roll decreases, the speed of the motor connected to it will keep increasing and hence the voltage across its armature will increase. This leaves less and less voltage across the winding motor armature as the cycle progresses, causing it to keep slowing down. The result is a substantially uniform cloth speed. Fig. 2 shows the manner in which the cloth speed of the all-electric jig varies from the beginning to the end of one complete pass as compared with the speed variation found in a mechanical jig. The diameter of roll of cloth used in obtaining data for these curves was approximately 26 in.

Increases Production

Aside from the quality of the work done, the maintaining of a constant cloth speed increases the amount of work possible for one jig to accomplish in a given length of time. Let us consider a typical case of a jig with 7-in. diameter beam rolls driven through a system of bevel gears and clutches at a speed of 50 r.p.m. If we start to wind a roll of cloth onto one of the beams, the cloth speed will be $7 \div 36 \times 3.1416 \times 50 = 30.5$ yd. per minute. When the roll has reached a diameter of 24 in., the surface speed will be $24 \div 36 \times 3.1416 \times 50 = 104.72$ yd. per minute. The average speed will be that found at the time when the

roll on the beam has reached its mean diameter. The mean diameter we find from a simple calculation to be 17.68 in. Thus the average speed would be $17.68 \div 36 \times 3.1416 \times 50 = 77.15$ yd. per minute.

It is not practical to drive the beam roll at a speed greatly in excess of 50 r.p.m., since with a large roll of cloth on the beam, the resulting peripheral speed would be so high that liquor would be splashed about, thus damaging the work being done on adjacent machines.

If now we drive the jig so that we obtain a substantially constant cloth speed of 100 yd. per minute, the result is a 33% increase in the yardage for a given length of time. Where the cloth is washed, then dyed and fixed, a large number of passes back and forth from one beam roll to the other is necessary. It is obvious then that a considerable increase in production can be obtained through constant cloth speed.

Tension Control

If we now place a variable resistance shunt across the terminals of the unwinding motor armature, some of the current drawn by the winding motor will flow through the shunt causing a voltage drop across it. This voltage drop must exactly equal the voltage of the unwinding motor armature. If the resistance value is so low that, even with all of the current of the winding motor flowing through it, the voltage drop is still smaller than the voltage of the unwinding motor, the unwinding motor becomes a generator and forces enough current through the resistance in addition to that drawn by the winding motor to make the drop across the resistance equal to the voltage of the unwinding motor. This means that the cloth, acting as a belt, turns the unwinding motor and produces power, thus giving a braking action and causing a tension in the cloth. If we increase the ohmic value of the resistance to the point where the entire current of the winding motor flowing through the resistance causes exactly the same voltage drop as the voltage of the unwinding motor, no current will flow in the unwinding motor armature, and consequently no braking will result. This would give tensionless operation, the only tension on the cloth being that necessary to overcome the friction of the bearings.

As the diameter of the driven roll increases, the driving motor takes more current, and this current causes a higher drop across the resistance. At the same time, however, the unwinding motor has been caused to speed up because of the decreasing diameter of the unwinding roll. The voltage across its armature has, therefore, increased, thus balancing the increased voltage drop across the resistance. From readings taken on a machine, in actual operation, it was found that the result of this balancing was a substantially constant tension in the cloth.

In the case of the ordinary jig, the braking effort exerted by the band-brake arrangement increases as the radius of the cloth roll decreases, due to the increased speed of the beam roll shaft. Using the same example as was used in an earlier paragraph, with a 24-in. diameter roll on the unwinding beam and with only one lap of cloth on the 7-in. winding beam roll which turns at 50 r.p.m., the speed of the unwinding roll would be $7 \div 24 \times 50 = 14.5$ r.p.m. When all the cloth has been transferred from the unwinding beam to the winding beam, the speed of the unwinding beam would be $24 \div 7 \times 50 = 171.5$ r.p.m.

Thus, in one complete pass, the speed of the braking

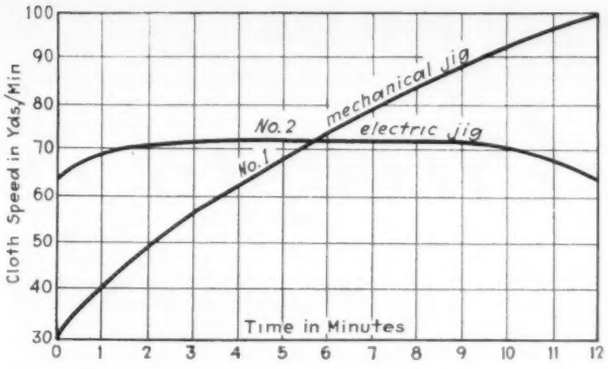


Fig. 2. Curves showing variation in cloth speed on electric jig and mechanical jig

pulley varies from 14.5 r.p.m. to 171.5 r.p.m.; and this variation has a material effect on the braking effort afforded by the brake pulley. The combined effect of the decreasing diameter of the cloth roll and the increasing braking effort of the brake pulley gives a change in the tension in the cloth of about 10/1 in the example just used. Fig. 3 shows how the cloth tension in the case of the all-electric jig varies as compared with the variation in the case of the ordinary mechanical jig.

The diagram shown in Fig. 1 is, of course, a simplified one and shows only the principle on which the jig operates. It must be understood that a system of magnetic reversing switches so wired as to cause one motor to be the wind-up motor, and the other the unwinding motor when thrown in one direction, and the opposite set-up when thrown in the reverse direction, are necessary.

In addition to this pair of switches, a third relay is used for closing the line circuit, and a fourth relay is provided to give a smooth acceleration when the equipment is started from rest in either direction. A normally closed contact finger on the line-closing relay causes the machine to be brought to rest by dynamic braking when the "Stop" button is pressed. This braking is always applied to the motor on the unwinding beam, so that in stopping from either direction no slack is allowed to form in the cloth. The two motors drive the beam rolls through spiral bevel-gear reducers.

[The original paper concludes with a discussion of the mechanical features of the jig; its control equipment; and the automatic reversing, stopping, and oscillating devices. These points were described on pages 60 and 110 of November, 1932, TEXTILE WORLD.—*Editor.*]

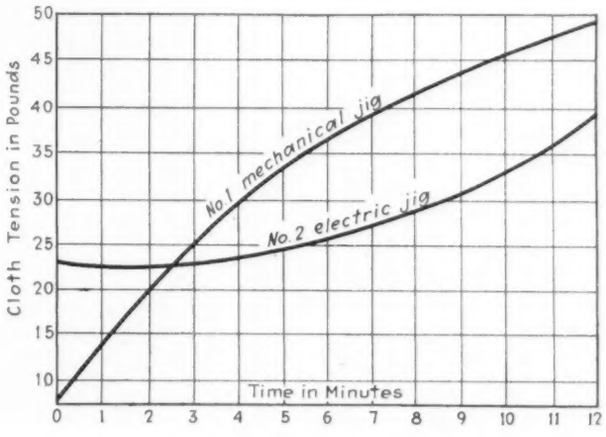


Fig. 3. Curves showing variation in cloth tension on electric jig and mechanical jig

TREND TOWARD

Grouped Selling

OF HOUSEHOLD TEXTILES

SOMEONE has written a book entitled—"I Like the Depression!" Business executives are pruning out the dead wood in their organizations, cutting away many folderols of the post-war inflation period, and cultivating real fundamentals. Manufacturers are studying their products and their markets more intensely than ever before, and attempting to adjust their merchandising policies to meet the conditions of a new day. This trend, visible in many lines of textiles, is a constructive outgrowth of the depression.

Blanket manufacturers and commission houses are devoting considerable attention to possible means for selling more effectively—and at a lower cost. Progress of this line of thinking is reflected in several recent announcements. Nashua Mfg. Co., as reported in the October issue of TEXTILE WORLD, has acquired the Dwight-Anchor wide sheeting, sheet and pillow case business, while the Leaksville Woolen Mills, Inc., have appointed Cannon Mills as their exclusive selling agents. Furthermore, there is in the process of formulation a plan to organize a new department in one of the leading Worth Street houses to handle the sales of 10 or 12 of the smaller blanket mills. This would be a logical tie-up with the sale of bedspreads which constitutes a fairly large proportion of the business done by this particular commission house.

Finished textiles included in the "household group," particularly sheets and pillow cases, bedspreads, blankets and tailored draperies, are frequently purchased by the same buyer or department head in the retail store. Thus, a salesman representing a line of blankets can carry one or more related lines without requiring any additional traveling and very little more time.

For some time executives of the Nashua Mfg. Co. had been handling sheets and pillow cases with their lines of blankets. It was recognized that the usual method of crashing into another line of business by adding new capacity to an already crowded field would be a poor policy, but obtaining the new line by the purchase of the Dwight-Anchor business was regarded as a desirable move. The "Dwight-Anchor" brand, already widely known in the sheet and pillow case trade, combines logically with the products manufactured by Nashua.

The all-wool and part-wool blankets made by the Leaksville Woolen Mills were previously sold through an independent sales organization. The new selling arrangement with Cannon Mills, which became effective Dec. 1, not only gives the blanket mills the added advantage of a tie-up with the distribution of Cannon towels, sheets and pillow cases, and with the bedspread lines sold through the same organization, but also gives the Cannon salesmen a well-rounded line of household textiles.

Other large selling organizations are known to be looking for suitable mill accounts that will fit into their set-up without greatly increasing overhead expenses.

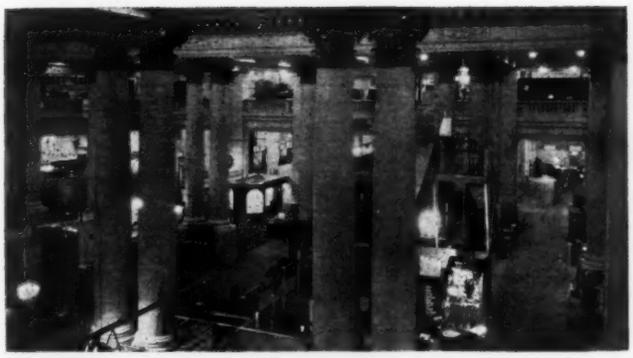
Selective Distribution

Considerable effort has been spent by blanket manufacturers in building up an effective plan of selective distribution as a means of removing their advertised brands from the destructive influences of price competition. Jobbers have been given restricted areas, or "zones," in which they have the exclusive distribution of the manufacturer's trade-marked blanket. Retailers, when advised that they would have to purchase through the jobber representing the mill in their territory, frequently became indignant, objecting to dealing with a local jobber, and declared that they would purchase elsewhere. The larger department stores in metropolitan cities, however, continued to buy direct from the mills or their commission houses. The plan of selective distribution, after the retailer has been educated to its advantages, has worked to the advantage of mill, jobber and retail store.

Several blanket manufacturers who have adopted the selective distribution plan, carrying it into the retail trading area as well as into the jobber's zone, have found it necessary to devote more attention to sales-promotion activities. Once the retail store is confident that it has the exclusive representation of a line of blankets in its town, there is considerably more effort made to build up a volume business, since the fear of price competition and possible direct comparison of the merchandise with that in another retail store has been removed. This plan of distribution is, in the long run, more economical for the mill or selling house, as the salesman does not call upon as many customers in each city.

Spreads, blankets, sheets and pillow cases are used as a unit and may logically be sold as a group

Power Show FOCUSES ATTENTION ON NEW EQUIPMENT



CONTRARY to expectations, the Tenth Exposition of Power and Mechanical Engineering, held at the Grand Central Palace, New York, Dec. 5 to 10, proved to be practically as big as any of its predecessors. All three floors were filled with exhibits brimming with large and small equipment from stokers to microscopes and from ball bearings to air conditioners. Many machines were set off by elaborate scenic effects; and there was a sparkle, color, and predominant tidiness to the whole affair which might well serve as an example to certain textile power plants.

Typical of the equipment being developed in recognition of the trend toward higher steam pressures in industrial plants—including textile—were new butt-welded steel steam valves having the same face-to-face dimensions as the flange-end valves. The prophecy was made at the show that five years from now all high-pressure steam plants will be equipped with welded valves. Textile power plants are abandoning pressures of around 200 lb. in favor of from 600 to 900 lb., using a turbine bleed of around 200 lb. for process work. Welded valves were also shown for the new mercury-vapor boilers.

Other valves included a check type with disk tilted off center to avoid slamming and resistance to line of flow; an automatic check valve of new design which can be hydraulically, pneumatically, or electrically operated, allowing for line losses; and a globe valve with nickel-iron bushing carrying the stem thread to avoid wear on stem and bonnet. Several new packless expansion joints were shown.

A new high-tensile electrode demonstrated for electric welding was said to afford a strength of 70,000 lb. per square inch; and a new bronze non-fuming welding rod for oxy-acetylene work on cast iron was reported to afford a strength of 60,000 lb. Particularly emphasized was the new use of oxy-acetylene cutting equipment for "flame machining," such as planing, milling, drilling, etc.

New metals were exemplified by a nitrided steel in which nickel has been added to the usual ingredients, affording increased toughness at the core, although slightly lower hardness in the case. In the way of silent chain drives was noted an extension of the range of sizes to include considerably smaller commercial pitches, one company demonstrating a $\frac{3}{16}$-in. pitch. In the anti-friction-bearing exhibits a tendency was found toward more extensive and improved sealing by the bearing manufacturer, thus relieving the machinist of the closure work. Of particular interest among the lubrication exhibits were new oils and greases said to utilize the minute electrical discharges commonly emitted by the working parts of a machine to cause an infinitely thin film of metallic zinc to be deposited on all wearing surfaces.

Electrical equipment exhibited included a circuit breaker actuated by a bi-metal strip, one side of which consists of Invar, said to have the lowest coefficient of expansion of any known metal, and the other side of nickel manganese steel, having a high coefficient of expansion—heat serving to bend the bi-metal strip to release a trigger. Compact construction, high efficiency, and full horsepower rating at the output shaft were claimed for a new line of polyphase, single-phase, and d-c. rating motors having built-in, internal, helical planetary-gear speed reducers, affording a speed range from 600 to 13 r.p.m.

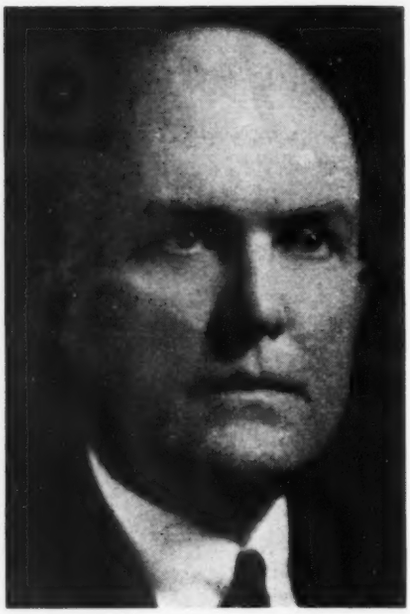
Steam-trap exhibits showed a strong trend in favor of the inverted-bucket type, with the attendant air-elimination and self-cleaning features. One trap of this character has an unusually large thermostatically controlled air vent which remains wide open and prevents the bucket from floating as long as there is any air in the system, closing mechanically when steam arrives. A new line of traps has only two moving parts and stainless steel at all wear points. A new heat exchanger is without tubes and unusually small in size, permitting, it was said, a particularly high heat-transfer velocity with practically no stagnant films on the heat-transfer surfaces. An interesting improvement shown for zeolite water softeners was automatic single-valve control.

Outweighing all other types of equipment in number of exhibits were the various instruments. These included potentiometer recorders, multi-purpose electrical controllers, flame-failure protectors utilizing grid-glow tubes, all-electric proportioning systems with graduated control, new individual control valves for one-pipe steam systems, new unit-heater controls, recording and dial mercury-actuated thermometers equipped with new compensated type of capillary tubing having special uniformity of bore, moisture- and dust-proof recording and dial thermometers and dial pressure gages with heat-treated chromium-plated alloy steel parts for resisting excessive vibration, free-vane two-pen thermometer recorders, direct-reading humidity recorders, free-vane adjustable differential temperature controllers for maintaining a predetermined value between two temperatures, and counters with hardened-steel moving parts capable of speeds as high as 8,000 or more counts per minute, arranged for subtraction when desired. New optical equipment included an ortho-stereoscopic camera taking pictures showing all three planes in the same magnification and an all-metal Littrow-type spectrograph.

A line of portable mixers has been equipped with air-jacketed motors which free themselves of steam vapors. Refrigerators and coolers included several new models of the ammonia, steam ejector, and centrifugal types. A new cork-board insulation is coated at the manufacturer's plant with an asphaltic compound.

Lost Opportunity

FOR PROFITS DEPLORED BY K. P. LEWIS AT N. C. MEETING



CALLING upon mill executives to regulate production, and voicing strong criticism of the methods employed in making the Government crop reports, Kemp P. Lewis, retiring president of the North Carolina Cotton Manufacturers Association, in his annual address at Pinehurst, N. C., Nov. 18, declared that the southern manufacturers have failed to grasp the opportunity at hand during the last few months to obtain a profit from their operations. He urged the cotton mill executives not to become panic stricken by the present dullness of demand and attempt to force goods upon an unwilling market at decreased prices.

Charles A. Cannon, president of Cannon Mills Co., Kannapolis, N. C., was elected president of the association to succeed Mr. Lewis. A. M. Fairley, of Waverly Mills, Inc., Laurinburg, N. C., was elected first vice-president; while R. Grady Rankin, of Textiles-Incorporated, Gastonia, N. C., was named second vice-president. Hunter Marshall, Jr., was re-elected secretary and treasurer.

New members of the board of directors were elected, as follows: E. C. Dwelle, Charlotte, N. C.; H. K. Hallett, Paw Creek, N. C.; A. H. London, Pittsboro, N. C.; S. T. Peace, Roanoke Rapids, N. C.; E. D. Pitcher, Spray, N. C.; and J. Spencer Love, Burlington, N. C.

Senator Josiah W. Bailey, of North Carolina, was the principal speaker at the banquet Thursday evening. His excellent address, carrying with it a note of conviction, called for reductions in taxes—not merely a shift of the burden of taxation—and urged business men to take more active interest in the affairs of government.

Resolutions were passed at the executive business session Friday morning urging governmental agencies to eliminate all non-essentials and to adjust the expenditures for essentials to conform to existing standards of business; commending the efforts of George A. Sloan and his associates in the Cotton-Textile Institute in representing and formulating the ideals of the industry; objecting to a premium allowance for staple of 100% on $1\frac{15}{16}$" and 75% for 1" and petitioning the New Orleans Cotton Exchange to substitute therefor a premium allowance on such cotton at 60%; and protesting against any bill similar to the Voluntary Domestic Allotment Act, sometimes known as the Harriman Plan, which was introduced at the last session of Congress.

President Lewis, in his annual address, had the following to say:

"The question of the proper merchandising of our products carries with it the sensible regulation of our production. Would it not be vastly better for all of us, instead of trying to break records for the number of days run, or the number of nights operated, to commence to look at the situation from the standpoint of the stockholder and so regulate our schedules that the buyers of dry goods may not soon have forced upon them the knowledge that we have burdensome stocks that we are ready to give away? Surely the time has come when our stockholders should have evidence of better judgment and wiser action on our part.

"The large orders received during August and September were made possible by previous curtailment and regulation of production. Upon receipt of these orders mills jumped to full time operation, many of them running at night, and the consequence is that the current production of cotton goods presents a grave danger of stock accumulations. The major part of our industry is operating at a rate that would be considered high even in normal times, and the difficulty is that the mills are attempting to maintain heavy production schedules in the face of diminishing demand. The consequence is that the back-log of unfilled orders is being cut down, stocks are beginning to accumulate and manufacturing margins have been reduced. Mills are showing an unfortunate disposition to break away from conservative policies that have been followed in the past. The present time, more than any other time in the last several years, demands the most careful scrutiny of the statistical situation in the various groups of the industry that reflect the relation of supply to demand.

"In connection with this threat of overproduction, many of us are gravely concerned as to the success of the strong effort being made by the Cotton-Textile Institute to preserve the operation of the policy of not working women and children at night. This final effort on the part of the Institute and many of its members to preserve this most beneficial program . . . . . strongly deserves your support."

President Sloan, of the Institute, at the business meeting, expressed his confidence that the decision of the directors of his organization in retaining the policy of not employing women and minors at night would receive the endorsement of the consuming public, but deplored the tendency on the part of some mills to expand production beyond reasonable bounds and the widespread acceptance of business without making a profit.

> *"It seems to me that the managers of the cotton mills of the South have been sadly lacking during the last few months in appreciation of their opportunities and it seems particularly distressing that they are not grasping the opportunity to profit on their operations at a time when the opportunity has been right at hand. I appeal to you all not to get panic-stricken by the present dullness of demand into pushing your goods on an unwilling market at decreased prices. Just a little courage and merchandising judgment will save the cotton mills of the South millions of dollars during the next year."*
>
> —K. P. LEWIS.

Master Mechanics

PROBE ELECTRICAL AND MECHANICAL PROBLEMS

ELECTRICAL and mechanical problems of the textile mill were discussed at the fall meeting of the master mechanics division, of the Southern Textile Association, in Spartanburg, S. C., Nov. 4, under the leadership of E. P. McWhirter, of Monarch Mills, Union, S. C., chairman of the section. Two features of the program were a paper on "Surge Voltage in Secondary Circuits," by W. G. Young of Wiscassett Mills Co., Albemarle, N. C.; and an illustrated lecture on "The Results of Mechanical Research With Regard to Drives," by Victor A. Hanson, of the Mechanical Power Engineering Associates, Brooklyn, N. Y. Mr. Young stated in part:

Protection against lightning surges is necessary to insure continuity of service, to minimize passing of the surge into the secondary circuit, and to prevent high-voltage winding potential getting into the secondary circuit. It has been found that 2,300-volt motor equipment is likely to experience occasional failures, even when protected by arresters of exceptional merit. This no doubt is due in a large part to the fact that surges on circuits of this voltage are higher than the lower voltage circuits, such as 550 volts; but it must also be considered that it is more difficult to insulate for these higher surge voltages. Further, it is to be considered that low-voltage lightning arresters are usually of the distribution type for plant service; consequently they will not limit surges to as low values as the more expensive station types. If we assume that a transformer station is within 50 circuit feet of the mill entrance and protected by the largest capacity arresters, we should expect from such an installation the very highest type of protection. This, of course, assumes that the ground resistance is low and that the length of the ground lead is short.

Where mill service is long and of more than one circuit, further protection is advisable at the point of entrance. It is known that a properly designed arrester will limit the voltage of a surge within reasonable limits to a fixed value. The surges to which apparatus may be subjected are limited by choosing an arrester of the proper rating. It is possible to limit to a minimum the chances of failure due to flashing over the insulation of the transformer, passing not only the surge into the secondary but also subjecting the secondary to high-voltage winding potential.

Where ungrounded secondary circuits are used, a surge voltage on the transformer primary will give the secondary circuit a potential above ground. The better the protection offered the primary or high voltage of a transformer, the less will be the voltage to which the secondary is subjected.

Discussion of Mr. Young's paper emphasized that motor phase circuits should be kept clear of grounds. Several members recommended pulling switches on village lighting lines during thunder storms to avoid damage caused by lightning surges. Also it was pointed out that satisfactory grounds do not always exist, even though they may extend several feet into the surface earth. It was suggested that instruments be used to determine if good grounds do exist, and also that some trouble could be eliminated by placing open wiring in conduit and grounding the conduit.

Mr. Hanson, in his address, stated that as a rule the exclusive use throughout the plant of any one type of drive, whether group or individual, is not the most economical and efficient installation. Modern group drives, he declared, are both up-to-date and efficient and, contrary to the contention of some people, are quite flexible. He also cited examples of low power consumption and initial installation costs made possible by group drives.

Cast-iron welding with acetylene was said to be an economical method of welding cast-iron journals. Bronze, on the other hand, received some favorable comment because of its hardness and the ease with which it can be machined. Mr. McWhirter stated that he had seen electric welding of cast iron with the same material, but pointed out that such jobs cannot be machined. One manufacturer, he said, has developed a special steel welding rod suitable for electric welding of loom frames.

In discussing the cost of renecking worn steel rollers, one speaker related his experience in a 40,000-spindle mill where a new lathe was purchased and a man employed exclusively for renecking rollers. After acquiring the right technique, this man could reneck 28 rolls a day, the cost in 1915 being 42¢ per neck. Another mill reported recent costs for renecking rollers, including labor, power, and good steel, of 40¢, exclusive of overhead.

The majority favored the policy of having the mechanical or electrical department assume the responsibility for oiling and cleaning motors. In one mill of 103,000 spindles, it was pointed out, an electrician with one helper blows off and cleans motors every Saturday after the plant has been closed. Mr. Young stated that in his mills the overseers have charge of cleaning and oiling motors. Only hand cleaning is employed, and there have been no motor failures due to lack of oil in more than two years. One member washes out motors with gasoline once a year and revarnishes with insulating varnish. It was estimated that the number of motor failures in a cotton mill averages about 5% per year.

H. H. Iler, of Union Bleachery, Greenville, S. C., found that in many cases the drain plugs on ring-oiling motors will permit a slow dripping of oil. This trouble can be practically eliminated, he said, by giving the drain plugs a coat of varnish before puting them in place.

Installation of individual meters in village houses was recommended by several members as the best way in which to reduce village lighting costs. In some villages the employees are charged for all the electric current consumed, while in others they are allowed a minimum amount at no cost, but must pay for all surplus current used during the month. Lighting costs had been reduced 60% by the installation of meters in one village.

Overseers'

THIS DEPARTMENT—

offers a new subject for discussion each month and gives readers' comments on problems introduced in previous issues. The subject opened in October is closed and a summary of contributed ideas is given on opposite page. Overseers and others are invited to discuss the subject presented under the heading "Encouraging Workers to Be Thrifty" and other questions brought up in the super's talks. Letters accepted and published will be paid for without regard to length. Brevity is desirable.

▼

ENCOURAGING WORKERS

"WE HAVE a more conservative group of employees than you will find at most mills," observed Superintendent Chase as the overseers settled in their chairs for the meeting, "but some of our families are either careless or very foolish in the management of their personal finances. You know most of the folks I am referring to as well as I do. What I would like to hear this morning is some suggestions on how we can encourage thrift among our workers. Or should we continue, as we have done in the past, to disregard the personal financial problems of our employees?"

"That is a question that I've been turning over in my mind for several weeks," Pete spoke up. "Some of the men in my department are up to their necks in debt all the time, when I am sure that more careful planning of their expenditures would keep them above the danger line, but I've never discussed personal finances with these fellows because I don't want them to think I am trying to stick my nose into their affairs. My father used to tell me that when he worked for the old United Mill, in the days when Colonel Beverly was active, they kept right up with the financial standing of all the mill families. They wouldn't even promote a man if he wasn't a thrifty fellow, because the Colonel believed that a man who couldn't manage his own finances wouldn't be a very efficient supervisor on his job. I think we should have it understood with our workers that thrift and careful spending will be considered in making promotions

Mill Newspapers Considered

Editor, Overseers' Round-Table:

From my own experience, in a concern devoted to the manufacture of textile machinery, I believe the worth of a plant newspaper cannot be too highly estimated, as a means of stimulating employee interest and good will and promoting the spirit of friendly competition between departments.

But—and this is all-important—it should be kept free of "preachy" articles which talk down to the worker. Interesting material dealing with new methods of company procedure does not of course fall into this category, but is welcomed by employees, and where space is available intelligently discussed with benefit to all concerned.

It is surprising, too, what wealth of literary material is often uncovered. The mill poet makes his bow in the pages of the monthly, and we discovered a very able cartoonist to parade in pen and ink the foibles and misadventures of workman and executive in a manner which calls for good-humored appreciation of the difficulties of both.

From a safety promotion standpoint, the mill newspaper is of great value; and, if necessary, the mill physician can contribute a column dealing with the treatment and prevention of those ailments of seasonal occurrence that are usually productive of lost time and money for mill and worker.

In the final analysis, it will be found that the cost of publishing the mill newspaper is more than repaid by the spirit of good will and closer cooperation that is fostered by its appearance.

ROBERT S. ALEXANDER,

Providence, R. I.

Editor, Overseers' Round-Table:

Bill, I believe, has the correct slant on the matter of a house organ or company newspaper. If the management's purpose is to spread news of the community, then much more effective spreading could be attained through the establishment of a local correspondent for some nearby city newspaper which has a circulation in the village. The news so printed would have the virtue of more formality and authenticity.

The very elements of informality and good fellowship that are stressed by Pete would in a short while cause the paper to be taken lightly and even ridiculed. Such an attitude on the part of the workers toward the paper as an instrument in the promotion of a safety campaign would very shortly nullify any good beginning in such a campaign. A good overseer, backed up by the superintendent, can make a much safer and cleaner plant than any news sheet which would not cause the workers to see the serious side of the prevention of industrial accidents.

While the kind of sheet mentioned by Superintendent Chase might not cost much, the company certainly would get little return on the money so spent. W. D.W.

Editor, Overseers' Round-Table:

A weekly newspaper or a monthly magazine will always have a welcome from the employees in any plant, and it helps to keep the employer and the employee closer together.

Sales advertisements from a few of the progressive merchants in the community would pay all the expenses of publication. Boxes could be placed in the various departments of the mill and employees having news items could drop them in the box. The editor or someone else could collect the news items on certain days and pass upon them for publication or rejection. In that way each employee would feel that he had a part in making the paper a success and would gladly contribute news to make it more interesting.

C. W. L.

Editor, Overseers' Round-Table:

Having been business manager of two college publications, as well as news reporter for several other publications, maybe I'm a little prejudiced towards a mill paper. However, I really think a mill

Round-Table

TO BE THRIFTY

in the plant. Moreover, we should make it a rule that every family must live within its income and try to save something, if only 10c. a week, out of every pay envelope."

"You are going to step right into trouble if you try anything like that, Pete," was the way Bill opened his reply. "People aren't going to stand for the company telling them how they are to spend their money. They think we have some detectives now trying to look after their morals, and when you begin feeling for a man's pocketbook, you are likely to make him sore. My idea is to let every man take care of his own finances and, if he gets into trouble, that's his funeral. It's true that the money lenders in town have made a big killing out of some of our folks, charging interest rates that are clean out of reason, but it is the worker's fault when he borrows money from these loan sharks. I'm in favor of the mill advancing money to our steady workers when they need funds for medical attention and emergencies of that kind; but as for trying to tell our employees how to spend their money, or that they *must* save something every week, my suggestion is—forget it."

▸ Do you believe the mill should take steps to encourage its workers to live within their incomes and to save something every week? What would you suggest to Superintendent Chase?

by producing a better understanding between the mill management and its employees.

A personal experience calls to mind an incident when a group of us were employed by a large oil refinery in Pennsylvania whose house organ used a picture of us in one of its issues. All of us are a little vain, and you can believe that we anxiously awaited that issue. I can't say that this organ was the only thing which made us feel kindly toward this company, but it does promote a better spirit of friendliness between employer and employee.

E. S. DUNLAP.

Editor, Overseers' Round-Table:

The purpose of a house organ is to increase the interest of employees in the activities of their firm. While the objects of a house organ are admirable, I have seen many that were lacking in interest and also in frequency of publication. The most successful of such papers is one issued by the firm, the contents describing the various social activities in the organization, its history and other achievements, and what is being manufactured. This periodical is on sale to the employees of the firm, while it is also supplied gratis to the regular customers of the company. Such a plan gives the magazine a fairly wide circulation, while the readable matter in its pages should be considerably more than if it caters only to employees.

The publication should come under the management of the publicity department which will have a staff capable of handling this work. The matter published should be contributed by employees many of whom will be gifted in this direction. The interest of employees in a firm extends beyond social and sports activities, and it will be found that the majority are interested in what the company is doing technically and commercially. This gives the magazine a considerable amount of reading value which will insure its being well received by the employees.

W. E. W.

SUMMARY

MILL NEWSPAPER. *Approximately 74% of the letters were in favor of publishing a small newspaper or house organ for mill employees. The development of better understanding between the management and the operatives was generally considered as the most important advantage of a well planned and carefully edited mill newspaper. About 26% believed that the publication of a house organ or mill newspaper would be of little value to the company or its employees. They voiced the opinion that other means, less expensive and more effective, were available to accomplish the objectives usually set for company publications. Several letters reported the experience of the writers in regard to house organs.*

▼

Editor, Overseers' Round-Table:

For once I am in accord with Bill's idea. There are many ways around an industrial plant in which money can be spent to greater advantage than in publishing a newspaper. In fact, my experience has been that it is usually a waste of both money and effort. As Bill says, the employees often jump to the conclusion that the company is trying to dictate to them, or force its own opinions on them, thus creating resentment instead of good will.

My idea is to use the bulletin boards for announcements and leave the publishing field to men who have the equipment and technical training to produce a real newspaper. After a trial I believe Superintendent Chase will agree with Bill that it isn't worth the trouble and expense.

W. C. BEHELER.

Editor, Overseers' Round-Table:

I do not hesitate to say that in my opinion there is no one thing that will do more to develop a close personal contact between the mill management and the community than the plant newspaper if it is properly handled.

To make a success of the paper, the employees should have a hand in its publication and should be encouraged to contribute items of interest. There should be no attempt to dictate to the employees through the columns of the paper, but it should be a mutual affair to develop interest in community activities. As a medium for announcements the plant newspaper is far superior to the bulletin board, chiefly because it will have the flavor of news, while the bulletin board is supposed to contain only business announcements. I am sure that any progressive superintendent will be pleased with the results obtained from the publication of a live, little newspaper.

J. E. B.

Anti-Trust Law

REVISION TO BE CENTER OF DISCUSSION IN CONGRESS

By Paul Wooton
Washington Correspondent, TEXTILE WORLD

◆ *Probably no one subject interests industry more at present than that of business stabilization—plans for which invariably entail some type of revision of the anti-trust laws. In this month's Washington letter, Mr. Wooton analyzes the outlook for Congressional action in this direction.*

STABILIZATION of business is a subject certain to come in for frequent discussion in the short session of Congress and in the special session likely to follow it. With the devastation of the depression vividly in the mind of each legislator it would be impossible to suppress discussion of steps that might prevent a recurrence of such a disaster. Leaders will be anxious to keep attention centered on the immediate program but in the face of the interest in economic stability there will be constant effort to arouse support for a variety of plans that are certain to be suggested.

Prevailing sentiment at the moment is that the chances are against any change of the anti-trust statutes, even to soften them or to make them more drastic. Pressure of other legislation at the short session would preclude consideration of any plan prior to March 4 but a special session of Congress seems to be inevitable, at which there would be ample opportunity to consider any proposal to stabilize business that might impress the steering committees as being worth while.

Some clarification of the question will come with the decision of the Supreme Court in the Appalachian Coals case. This decision is not likely to come down until late in February or in March. This case involves the important question of a central sales agency. Certain producers of high volatile coal in eastern Kentucky, southern West Virginia, Virginia and Tennessee proposed to set up a common selling agency. Seventy per cent of the commercial tonnage of high volatile coal in those districts was affected by this plan. A total of 136 producing companies signed an agreement to sell exclusively through the agency. All orders, under the plan, are to be turned over to the sales agency which would advise each company how much it might ship.

Counsel for the coal operators contended that the plan does not conflict with existing law but the Government contended that, in effect, Appalachian Coals would place a limitation on production with the expectation of maintaining higher prices than otherwise prevail. On behalf of the coal operators it was contended that prices could not be controlled with 30% of the tonnage of the districts involved outside of the agreement, to say nothing of coal produced in other districts.

Officials at the Department of Justice appreciate the seriousness of the situation in the bituminous coal industry but they insist that specific legislative authority should be secured that would authorize the establishment of district sales agencies if the industry thinks that will be helpful.

▼

Curiously enough there had been no previous auti-trust case covering the question of whether competitors, under certain circumstances, may cooperate for sales purposes.

There are two schools of thought on the subject. One school cites the American automobile as a splendid achievement of unbridled competition, wasteful thought it may be. In Germany, with its system of limiting competition, automobile development has lagged far behind that in the United States. While this school admits that great losses resulted in the long fight for the survival of the fittest in the American automobile industry, it was that very condition, they contended, which resulted in the position of superiority which the American motor car has held for many years. The other school takes the position that cut-throat competition results in wastes which outweigh any possible benefit from sharpening the wits of the fittest.

For the last 12 years there have been administrations in power in Washington which would have looked with sympathy upon some softening of the anti-trust laws but the demand for legislation to that effect never became sufficiently strong to result in any major effort to amend the existing statutes. Some now think that the opportunity has gone for the present. They feel that organized business has had its innings and now the tendency will be to build up independents and the small units in business and that any opening up of the anti-trust statutes simply will result in their being made more drastic.

In support of this latter feeling is the attitude of a subcommittee of the Judiciary Committee of the Senate, of which Senator King, of Utah, is chairman. While this committee has not made a formal report, a majority of its members feel that the anti-trust laws should be strengthened rather than softened.

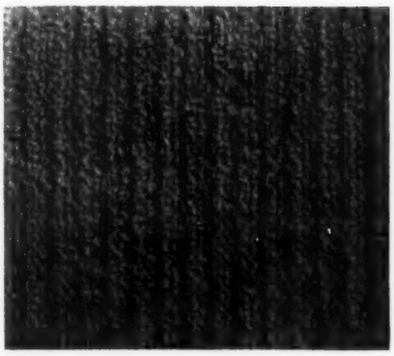
▼

A prominent member of the American Bar Association thinks the Commerce Department should furnish guidance in business stabilization. While officials of the Commerce Department feel that regulatory functions would conflict with their present cooperative relationships with business they do believe they have proven by actual accomplishments that they can contribute a great deal by showing how business failures can be reduced. This is an educational and not a regulatory function. It also is suggested that the Commerce Department should make a thoroughgoing study of the effects the anti-trust statutes have had on business.

It is anticipated that the anti-trust statutes will be changed very gradually, if at all. Any proposal that involves their fundamentals would precipitate hearings that would overflow the four-foot book shelf. The effort probably would not get further than the hearing.

Members of the Senate and of the House of Representatives recognize that there are many meritorious features embodied in the large number of proposals that have been made looking to more flexibility in the laws pertaining to the conduct of business but it is quite apparent that most of them regard any such suggestion with suspicion. They feel that the real purpose of these plans is to nullify some fundamental principle involved in this legislation. For that reason any legislative proposal of this character cannot command whole-hearted support by more than an occasional individual in either branch of Congress. Until that attitude changes there is little prospect of any important revision of the Sherman law, the Clayton act, the Federal Trade Commission act or any other statute which tends to preserve the principle of free and open competition.

The suggestion that the Department of Commerce should make a "thoroughgoing study of the effects the anti-trust statutes have had on business" impresses us as a sound one. Too many statements on this subject have been based on opinion rather than fact. An impartial study should develop worthwhile data—and the Commerce Department represents an excellent agency for such a survey. Editor.

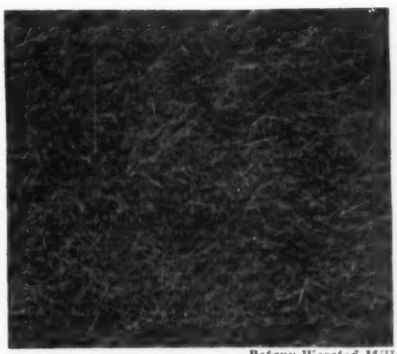


Ribbed coating; 2 picks plain and 2 picks fancy yarn in filling

Hand-knitted coat and scarf have become items of high style.

New corded diagonal which should be popular for women next spring.

Wool Novelties



Botany Worsted Mills

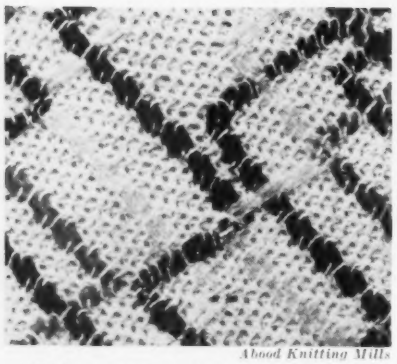
Rabbit hair mixture which promises well for spring garments

NEW uses, new styles, new adaptations—these are keynotes of current marketing of wool products. Since the wool trade has temporarily lost its annual rally by passing up National Wool Week, let us here focus on a few of the many recent departures from precedent which are being pushed individually and which are tokens of the inherent virility of the industry and its steadily broadening base.

In women's wear a partial catalog of wool products would include coats, suits, dresses, wraps, hosiery, underwear, gloves, scarfs, hats, slippers, room gowns, pajamas, handbags, and belts. New styles in dress goods feature rabbit hair mixtures, particularly in diagonal weaves. Diagonals in all-wool also hold promise, as do small plaids and checks. Introduction of the wool evening dress last season using fine broadcloth was a start in a new direction which to date, though promising, has not gone far. Wool hosiery remains a limited sport item for women; underwear is a scant wool consumer; accessories such as scarfs, handbags, hats, etc., are rising in wool

Betty Wales, Inc.

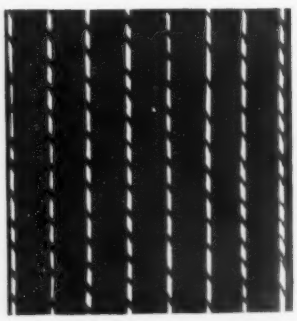
Wool evening dress, a vogue started last season and still progressing



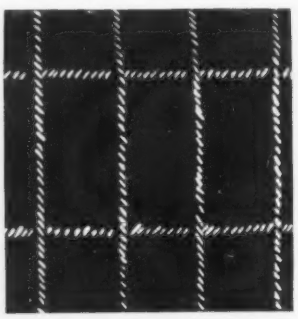
Abood Knitting Mills

Woolen yarn pattern in color over backing of knitted Durene.

Spun rayon and kid mohair give rabbit hair effect; magnified twice.



Design for women's spring suiting with fancy yarn stripe; this group of fashion sketches by courtesy of Salembier Studio.



Oblong check for spring developed by contrasting yarns. Adjacent sketch shows diagonal, vertical, and horizontal use

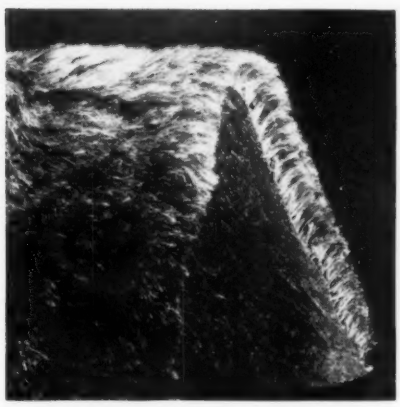
importance. The children's wear list is similar to women's wear, but includes sleeping suits and mittens. As an accessory are stuffed woolen toys.

The men's wear catalog includes coats, suits, sweaters, shirts, hosiery, underwear, neckties, bathrobes, gloves and slippers. New styles in suitings include neat plaids (particularly Glen Urquharts), small fancy weaves, mixtures and twists and staples. Higher-priced lines will stress new overplaids and other subtle effects to justify their price and attract users. Worsteds in coarse yarns giving a tweed effect may be tried. Coatings show a swing toward medium weights and there is a tendency to offer napped-face lines. Fine worsted shirtings command a limited market because of price; likewise worsted hosiery has a potential field awaiting popular-priced numbers. An interesting novelty is a silk hose with worsted foot made on a split-foot machine which may win converts to the wool hose habit. Wool neckties have proved durable and attractive but growth awaits further promotion.

New sport garment designed by DeWitt Welch from cape worn by Gouchos of the Andes.

Hemphill Co.

Bemberg-leg, wool-sole, heel and toe half-hose made on split foot machine.



Long pile fabrics used last season for men's coats are now featured in upholstery of modernistic furniture.

Wool necktie resists creasing; numerous woven and printed patterns offered.

Bathing suits are still dominated by worsteds. Several novelties are appearing for next season and the use of elastic yarn in some numbers will ease the stretch and improve comfort. Wool is important in many forms of sport and outing garments both woven and knit, and lately wool felts have made entry into the field. Hand-knitting yarns are meeting revival of interest not only for hand-knit coats and dresses which are sold commercially at very high prices through exclusive style appeal, but for home knitting of all sorts.

Blankets are receiving the impact of new styles and merchandising ideas. The silk mixture blanket is interesting and other unusual effects are in preparation. Wool is also used in quilts and heating pads.

Sale of carpets and rugs has been stimulated by cut prices and new designs. Rubber-backed carpets, with all the tricks that they can perform, have aided in broadening the field.

In the upholstery field wool goods, including mohairs, hold an important place in such various forms as plushes, velours, etc. Interesting fabrics of uncut pile are being shown. Very long pile goods such as were worn last year

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Setting: 12 reed, 4 and 6 ends in dent alternating. Loom width, 66". Ends, 3960. Picks, 60. Finished Weight, 11 to 11½ oz. Width, 54". Scour finish only.

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For many years, when a majority of the trade have thought of custom yarn dyeing, they have thought of Franklin Process. Their confidence has not been misplaced.

Now it is our purpose, when they think of cotton yarns, natural or colored, to make them think of Franklin Process again.

And we are already prepared to merit such confidence. We carry a large stock of the more commonly used counts and qualities of cotton yarns for immediate delivery. We have mill connections that will enable us to furnish other counts and qualities promptly. Our line includes a variety of qualities to meet practically every price requirement.

We can furnish not only standard items, but also specialties such as mock twist, ratines and slub yarns. In colored items we can furnish stock dyed yarns as well as package dyed yarns.

Your inquiries will receive courteous and prompt attention.

FRANKLIN PROCESS COMPANY

Yarn Merchants and Yarn Dyers. Also Manufacturers of Glazed Yarns and Machines for Dyeing and Bleaching Yarns in the Package Form, Cotton and Wool Raw Stock, Worsted Tops and Worsted Yarn on Jackspools and Machines for Soaking Silk.

Main Office and Plant at Providence, R. I. Branch Plants at Philadelphia, Greenville, S. C., and Chattanooga, Tenn. New York Office, 40 Worth St.

FRANKLIN PROCESS

COTTON YARNS AND CUSTOM YARN DYEING

No. 111

MATELÉ, A NEW TYPE PERMANENT CREPE

TRICONE, A NEW TYPE CIRCULAR KNIT

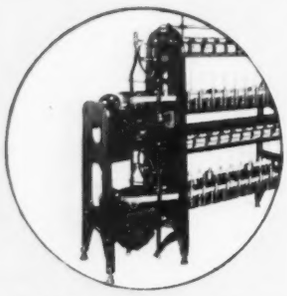
EASTMAN PURE DULL ACETATE YARN • In perfect packages noted for freedom from knots. An economical yarn of superior quality for weaver or knitter . . . For sources of the fabrics shown above, and others, consult the A. M. Tenney Associates, 171 Madison Avenue, New York City, Sales Agent for Tennessee Eastman Corporation (Subsidiary of Eastman Kodak Company).

Prompt Service to

A recent installation of "Monarch" Twisters.

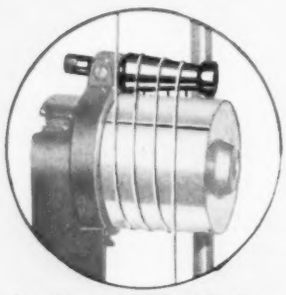
Increase Production

A few of the many modern Atwood features which may be incorporated in your early Atwood machines.



Early types of Atwood Twisters can be rebuilt into the modern "Utility" type.

Oilless features on winders insure cleanliness.



Lap Proof Separator Rolls on "5B's" eliminate roller laps and increase output.

If you need greater production—quickly—our adequate stocks and knowledge of operating conditions make possible quick shipment of new machines and repair parts.

Perhaps your particular problem is best solved by double decking —or by adding modern features—or by rebuilding present machines into new Atwood types. You will be surprised how quickly and effectively and at what a low cost this can be accomplished.

Whatever your needs—with unexcelled engineering and manufacturing facilities developed exclusively for throwing machinery, Atwood offers prompt shipment of dependable products, backed by Atwood's guarantee of quality.

Atwoods engineers have met the most exacting needs of several generations of throwsters. Atwood experience is available for the prompt solution of your throwing problems.

THE ATWOOD MACHINE COMPANY

FOUNDED 1852

ATWOOD STONINGTON, CONN., U. S. A. ATWOOD

Sales Offices: New York Wilkes Barre, Pa. Stonington, Conn. Charlotte, N. C. Los Angeles, Calif.

2356

ATWOOD MACHINES THROW THE BULK OF AMERICA'S SILK AND RAYON

THE PERSONAL PAGE

FREDERICK B. GORDON, president of Columbus (Ga.) Mfg. Co. which he founded 32 years ago, tendered his resignation at the annual meeting on Dec. 3 because of his desire to retire from active business. D. ABBOTT TURNER was named to succeed him.

LEO GOTTLIEB has resigned as president of the Fairmount Worsted Co., Woonsocket, R. I., and has taken a position with the American Woolen Co. in the styling and fabricating department. J. F. SWEENY, treasurer of Fairmont, has acquired Mr. Gottlieb's interest.

CRAIGHEAD ALEXANDER, with Aberfoyle Mfg. Co. for several years, has been transferred to Belmont, N. C., where he succeeds J. G. HOLT as manager of the company's mercerizing plant. Mr. Holt has been transferred to the new plant established in Canada by the company.

HENRY C. DEXTER, active in the textile industry for many years, was elected governor of the Rhode Island Society, Founders and Patriots of America at the society's meeting in Providence Nov. 29. He lives in Central Falls.

ALLYN B. MCINTIRE, vice-president, Pepperell Mfg. Co., Boston, was elected a vice-president of the Association of National Advertisers, at the annual meeting in Atlantic City in November. He is the first textile man to hold a responsible position with that body.

LEWIS M. CARPENTER, former treasurer of the Ashland Corp., and more recently connected with the Turner-Halsey Co., New York, has been named vice-president and general manager of the Spencer Corp. and will have complete charge of its four mills in the South and the selling office in New York.

GEORGE SEIDMAN, of Heineman & Seidman, has been re-elected president of the Textile Brokers Association, of New York.

H. WICKFIELD ROSE, formerly southern sales manager of the Viscose Co., has been transferred to the New York office of the organization where he will assist in sales and have charge of branch office relations. HARRY L. DALTON, who was associated with Mr. Rose at the Charlotte, N. C., office, is now southern sales manager.

GEORGE W. HENDERSON, for the last 15 years with Amory Browne & Co., is to become associated with Deering, Milliken & Co., New York, as assistant to GERRISH H. MILLIKEN, president and HENRY MAXWELL, treasurer, on sales promotion.

CHARLES FREID has been appointed sales manager of the Reliance Piece Dye Works, Inc., New York, after seven years association with the company.

W. IRVING BULLARD has been elected to the board of directors of Quinebaug-Wauregan Mills, recently merged.

DANIEL J. REILLY, New York, raw and thrown silk, has opened an office at 136 Washington St., Paterson, N. J.

FAY H. MARTIN, former manager of the Woonsocket Machine & Press Co. and now connected with The Belger Co., Watertown, Mass., has recently observed his 50th wedding anniversary. A dinner was served to relatives and a few close friends. Among those present was LOREN W. PENNY, formerly of Saco-Lowell Shops.

JOHN NASH MCCULLAUGH, who recently resigned as general manager of the Berkshire Knitting Mills, Reading, Pa. Prior to his association with Berkshire, Mr. McCullaugh was managing director of the National Association of Hosiery & Underwear Manufacturers. No announcement of his future plans has been made, other than that he has left for a brief vacation trip abroad. Mr. McCullaugh has also resigned as chairman of the board of L. & E. Stirn, Inc., and as chairman of the board of Belding-Heminway-Corticelli Co.

W. E. EVANS, superintendent of Conestee (S. C.) Mills, has resigned to accept a similar position with the Neuse (N. C.) Mfg. Co.

J. O. EDWARDS, superintendent of Rhodhiss (N. C.) Mills Co., has resigned and accepted a position as traveling representative for the Gossett Machine Works, Gastonia, N. C.

DON H. CURTIS has resigned as agent of the Willimantic Mills, American Thread Co., Willimantic, Conn., after 13 years in that position. Mr. Curtis' successor has not been announced, Assistant Agent Carlton S. Pollard being temporarily in charge.

EDWARD G. COLE has been appointed manager of the full-fashioned hosiery department of Belding-Corticelli, Ltd., at Montreal, having been transferred from Toronto. R. A. HAYDEN has been made manager of the Toronto branch.

EDWIN C. KENTON, vice-president of H. R. Mallinson & Co., New York, has been appointed sales director of both retail and manufacturing trades, following resignation of ALFRED ELLER and J. J. BECKLEY, divisional sales managers.

GEORGE E. DICKSON has resigned as sales manager of the Slater Co., Webster, Mass. Prior to 1927 he had been for many years associated with the Arnold Print Works. He has not announced his future plans.

FRED DUERBERG has been made manager of the New York sales office of Waldrich Co., succeeding the late SAMUEL EISEMAN.

JOHN D. HAWKE has been appointed agent for the Dempsey Bleachery & Dye Works of Pawtucket, R. I.

DR. CHARLES E. MULLIN, formerly of Clemson College, returned recently from an 11 months' expedition through the Far East.

GEORGE W. WILCOX has resigned as president of the Combine Hosiery Corp., which has been taken over by H. C. Aberle Co., Philadelphia.

A. ERNEST MARGERISON has been appointed general manager of the Hancock Knitting Mills, Philadelphia, succeeding W. Park Moore recently resigned.

JOSEPH COTTRELL, for the last 10 years executive vice-president of Chicopee Mfg. Co., has resigned.

MEYER EDELMAN for the last five years sales manager of the Cleveland Cloth Mills Co., Shelby, N. C., has tendered his resignation. He is succeeded by N. E. BURGESS.

T. H. BURKHARDT, who has had direct administrative charge of several plants in the J. Spencer Love group of mills, has been elected vice-president of Burlington (N. C.) Mills Co., the operating company of that organization.

E. L. CLIFFORD, formerly assistant superintendent, American Finishing Co., Memphis, Tenn., has been appointed plant superintendent, succeeding JOHN MARQUIS, who died late in September.

FRANK R. HEALEY, formerly overseer of finishing at Montreal Cottons Ltd., Valleyfield, Quebec, has returned from a business trip in England to his residence in St. Catherine's, Ont., Can.

Obituary

ETHAN ALLEN, aged 70, prominent for many years in the wool goods industry, died in North Brattleboro, Vt., Nov. 24. A manufacturer in his youth he turned to the selling end in New York in 1890 and represented many prominent mills during his career. He retired five years ago.

MISS ELIZABETH EATON BOIT, aged 83, since 1897 a partner in the Winship-Boit Co., operators of Harvard Knitting Mills, Wakefield, Mass., and prominent in textile activities all her life, died Nov. 14. She began as a time-keeper in the Dudley Hosiery Knitting Mills at Newton, Mass.

WALDO E. CONANT, aged 77, one of the founders of Conant, Houghton & Co., Littleton, Mass., webbing manufacturers, later merged with United Elastic Corp., died at Littleton on Nov. 17.

GEORGE P. ERHARD, aged 74, organizer and head of the Stafford Co., loom manufacturer, until its liquidation in 1931, died Nov. 17.

W. H. WILLARD, southern manager of the National Aniline & Chemical Co., with headquarters in Charlotte, N. C., died recently in Greensboro, N. C.

CHARLES H. HARDING, aged 70, retired from Joshua L. Baily & Co. and formerly with C. E. Riley & Co., New York, died in Philadelphia.

WILLIAM T. RANSOM, aged 88, founder and president, Niagara Textile Co., Lockport, N. Y., died Nov. 2.

FRANK H. HARGRAVES, aged 78, founder of the former Saco River Woolen Co., West Buxton, Maine, died after a brief illness.

THOMAS J. BROWN, aged 77, president, George Brown's Sons, Inc., Mount Joy, Pa., is dead.

JAMES W. CROMWELL, aged 90, senior member of William Iselin & Co., died early in November.

QUESTIONS AND ANSWERS

White Spots on Cotton Velour

Technical Editor:

In dyeing cotton velours we are having difficulty in avoiding white spots on the back of the fabric. Also we have experienced great difficulty in overcoming this defect by redyeing. We are enclosing one sample which has been cut from a lot that was bleached white to be redyed into red. The pieces were tested for bleach before dyeing, dyed in soda ash and common salt at a boil for 2½ hr., washed thoroughly in cold water, extracted in basket extractor, and run through a strike-out machine. We then dried on a pin dryer. The spots can sometimes be seen when the fabric is in the wet condition, but show very plainly after drying. We are enclosing also a sample from a lot which was not bleached. We shall appreciate your opinion as to the cause of the defect. (7851)

It is our opinion that the white spots or blotches are due to faulty methods of dyeing, lack of thoroughness in rinsing, or to undue delay between dyeing and extracting. We believe that dyeing for 2½ hr. is unnecessary. If the goods are dyed in the reel machine, 1 hr. to bring the bath up to the required temperature and a 1-hr. boil should be sufficient for this shade. In jig dyeing, eight to ten ends should give the desired results. For this heavy shade, bleaching should not be necessary. In the case of the goods which you have bleached and redyed, it is possible also that you failed to neutralize properly after bleaching and souring. We suggest that you get in touch with the manufacturer from whom you are obtaining your dyestuffs and ask him for detailed instructions as to the application of the particular colors which you are using.

▼

Knitted Rayon Mesh

Technical Editor:

We are inclosing a small cut of knitted rayon mesh and would like to know on what type of machine this was knitted. We are operators of tricot machines and would like to duplicate this material if possible. (7923)

It is our opinion that this net was knitted on a single-bed raschel warp knitter, but believe it can be done on a tricot machine where the gauge is suited to the size of rayon used.

Two guide bars should be used, threaded every other guide and arranged so that every needle has one end of rayon. The chains are arranged so that for seven courses every end knits repeatedly on the same needle. Then one guide bar moves one needle to the left, the other guide bar moves one needle to the right, and one course is knitted. Directly after, both guide bars move back to their original positions and knit seven more courses on the same needles used for the first seven courses. Then the bars move one needle right and left, but in the opposite direction to the first movement, knit one course, and go back to their original positions.

This makes a series of chains one wale wide, which are connected every eight

courses. After the first eight courses, the connection is with the wale on the left. After sixteen courses, the connection is with the wale on the right. This makes one wale take a zigzag line, first left and then right. The ends in the second guide bar act exactly opposite to those in the first guide bar, which results in the diamond-shaped net.

A third bar is needed to form the blue selvage wale, which is knitted with one end working continually on one needle.

▼

Dirty Filling in Crepe

Technical Editor:

We have quite some trouble with dirty filling in our crepe on pure-dye goods. However, the same crepe, manufactured at the same place and on the same machinery, in other words made exactly the same as the filling used in pure-dye goods, does not show up any dirt in weighted goods in either color—pastel or white. We would ask you, if possible, to give us the reason why the dirty filling does not show up alike in either goods when finished. We have made special trials in order to determine the trouble. We have put extra dirty filling in goods which were to be weighted, and they came out O.K. in the finish. (7958)

In our opinion the reason that the dirty filling does not show in both fabrics alike is due to the fact that the weighted goods are bleached and the pure-dyed goods are unbleached. In the weighted goods there are more chances of covering up the dirty filling, as there are several more operations involved in finishing and dyeing. We suggest that in the next lot to be pure-dyed you have the dyer bleach the fabric. This should clear up the trouble.

▼

Increasing Weight of Woolens

Technical Editor:

Can you tell me which is the cheaper way of increasing the weight of a piece of cloth, by putting in more picks per inch on the loom or having the finisher full the cloth in length? I fully understand the question of overhead in each department plays an important part; but, as a general rule, which way is the cheaper and more desirable? (7945)

Usually it is cheaper to put in a few more picks than to get the desired weight by fulling the cloth in length. Putting in more picks involves only a small increase in weaving cost plus the additional stock used; whereas in shrinking the cloth, every cost is increased in proportion to the percentage fulled. There might be an exception to this rule in the case of a very cheap cloth, but in most cases it is better to add weight in the loom, either by putting in more picks or by making the yarn heavier in count and weaving the same number of picks.

▼

Ribbon Effect in Rayon Warp

Technical Editor:

I have a five-cylinder Johnson rayon slasher for sizing 150-denier rayon. The warps are 120 ends and 160 ends per inch. I use prepared sizing, and with a good quality of size have no trouble at all. I have tried two or three less expensive sizings which have proved satisfactory in regard to weaving qualities, but have given trouble at the slasher.

With the cheaper grades of size, the warp comes off the slasher more or less in a ribbon effect, making a ridgy beam. This causes slack threads, which I want to overcome. As a rule, I get 6 to 7% stretch, but I have gone as high as 11% to try to stretch out the slack threads. Even with this stretch, some still appear. The formula for this size is 8 oz. to 1 gal. of water. I have experimented with 6 and 7 oz. and also added and reduced the softener, but as yet have found no improvement.

The 120-end warps are fairly good, as I can use a little more stretch, which seems to make some improvement; the 160-end warps are the ones which give the most trouble. As the yarn passes around the cylinder, it makes a nice even sheet, and I fail to see why I get slack ends. All warps are made on the same warper, and I do not paper the warps. (7856)

The conditions under which the sizing is carried out are not given in sufficient detail to permit of a very conclusive answer. However, the ribbon effect on the sized rayon, together with the fact that it is worse on the denser warps, indicates that the film of size on the rayon is of the wrong character, quantity, or type. This may be due to the composition or ingredients in the original size or to improper conditions of application and drying.

It is possible that the cheaper sizes contain too much of the wrong kind of starch products (at the expense of glue), so that the film of applied size is too thick and adhesive, and in drying, causes adjacent threads to be stuck together. If the sizing solution at the time of its use is not thin and watery, but is rather viscous or thick, this is most likely true. Such a solution might be hard to heat uniformly, and apply evenly; and it would be difficult to secure good penetration.

If too much size were applied, or the initial dry cans were too hot, the film could glaze and retain contact with neighboring films. Differences in wetting out might cause differences in elongation with the tension used; and variation in the resulting shrinkage in drying, together with the sections of ribbon-like threads, might cause looser threads in places. Perhaps the rayon has been excessively dried on the machine. The size solutions used may have

QUESTIONS AND ANSWERS

been much too strong in original concentration for the types of sizing materials employed. The more expensive sizes may contain gelatine or glue which give an entirely different kind of solution.

We have been informed that an acetate of starch size (with or without glue), softened with an emulsified wax, and containing some wetting-out agent gives a low-priced size which has no tendency to give ribbon-like sheets of adhering fibers. Little or no trouble has been encountered with loose ends which were not loose in the warps as they went onto the machine. A simple solution of powdered glue, softened with soap or soluble oil, with or without a wetting-out agent, has also been recommended. We assume that the machine conditions are satisfactory.

▼

Crease Marks in Welt

Technical Editor:

I am enclosing herewith samples of hosiery containing crease marks in the welt. These stockings were treated with 10% of boil-off oil for 50 min., and rinsed at 160°F. In the dyebath I use 5% of sizing and 2% of a dyeing assistant. Subsequent to the dyeing the goods are washed with 3% of liquid soap and then are finished with 5% of a waterproofing and delustering compound and 1% of scrooping oil. I have varied the above method and have experimented with other materials and have noted slight improvements in some instances. Nevertheless I have not been able to overcome this defect entirely. I might also mention that I put 3 doz. stockings in each net and load the machine to about ¾ capacity. The goods are boarded at 190°F. with a relatively high moisture content on hot-water forms.

I am inclined to believe that this trouble is due to causes other than improper dyeing; either the welt is knit too loosely, unsuitable yarn is being used (a six-thread, 26/23 grenadine twist being employed in these welts), or the twist has not been properly set. Any comment or suggestion that you offer will be greatly appreciated. (7860)

We have examined the samples of hosiery and find that, in addition to the crease marks in the welt, there are also a number of spots and splashes on the stockings. Washing a spotted stocking in a soap solution at 110°F. will not remove the grease spots. Raising the temperature to 150°F. and adding a little trisodium phosphate, however, will cause all spots and creases to disappear, indicating that damage occurred in the finishing bath.

This hosiery was finished in what is called "splash-proof" dull finish. This is a good finish if even distribution is secured—a difficult proposition when hosiery has to be processed in bags. The hosiery acquires a dull, water-repellent surface. It will be found that after washing at 110°F., the spotted portion of the stocking will not repel water, while the clean part will still be waterproof, showing that the waterproofing-delustering compound did not combine well with the other ingredients used in the finishing and thereby caused the goods to come out spotted. It may be that the soap remaining in the hosiery prevented the leveling of the waterproofing compound, or that the softener was not the proper one to use. We do not see any reason for washing the goods in liquid soap subsequent to dyeing; but if you find it necessary to do this, we suggest that the goods be washed thoroughly after the soap bath before you attempt to deluster and waterproof them.

Creases in the welt often are due to boiling the stocking in a vat without stirring. In other words the creases are cooked in the welt. As you did not state whether you do your degumming in the same machine in which you do your dyeing, it may be assumed that the same condition holds good in this case. Creases that are cooked in the goods by improper circulation are almost impossible to remove. We know of dyers that still degum in vats, the goods being poled during the boil-off; and good results are obtained in this way, provided the poling is not neglected by careless workers.

▼

Shantung-Crepe Constructions

Technical Editor:

I should like to receive some general information regarding constructions for shantung crepes suitable for men's summer suitings. These are to be made from either all silk, silk and rayon combinations, or shappe combination. (7963)

Listed below are two constructions for shantung crepes.

Construction No. 1: Warp, 20/22-denier Japan raw silk; reed, 55/3/2 or 330 ends per inch. Width in reed, 43 in. to finish 39 in. Weave, plain, six-shaft harness.

Filling, 80-denier of three-thread Doupion crepe, 40 or 45 turns per inch, 80 picks, two right and two left. Pure dyed.

Construction No. 2: Warp, 100-denier, 40-filament rayon. Reed, 55/2/1. Set in reed, 43 in. Weave same as above. Picks, 50 of 20/1 spun-rayon, shantung nub.

▼

Cockled Filling in Acetate

Technical Editor:

We are having a lot of trouble with what is known as cockled filling. We are enclosing a sample of acetate fabric with this imperfection. Note the wave effect of the cloth. We think this is due to the filling not being twisted properly. At times we find irregularity of twist; and we think that when you put a lively twist with one not so lively, it will cause this wave effect. We shall appreciate any information which will enable us to overcome this defect. (7908)

Examination of the sample shows that in some places the twist is quite irregular and in other sections is uniform. We believe, however, that the cockled appearance will disappear in the finishing process. To overcome this defect in the gray goods, we suggest that you have your quiller looked after to ascertain if there is any jerking in the winding of the quills. Likewise, make sure that there is an even tension and no drag on the shuttle tension.

In cases of this kind it is good practice to have loom closing as late as possible; that is, with the shafts or harness even, have the crankshaft between the top center and front center. In timings of this character, precaution should be taken that the loom is not picking too early and that you have a fairly open shed.

▼

Gummy Substance on Yarn Guides

Technical Editor:

I am inclosing a small knitting-machine guide with a small amount of cotton lint sticking to it. Can you advise what causes this condition? The collection of lint on the wire guide seems to make the yarn drag. Our customers assert that there is a sticky or gummy substance in the yarn. (7916)

The substance on the wire guide appears to be an extremely sticky adhesive, something like chewing gum. Some mills have had trouble at times with operatives who were careless with that article and in the use of candy. We suggest that you scrape several guides and have a chemist determine the nature of the gummy substance.

▼

Swivel Weaving

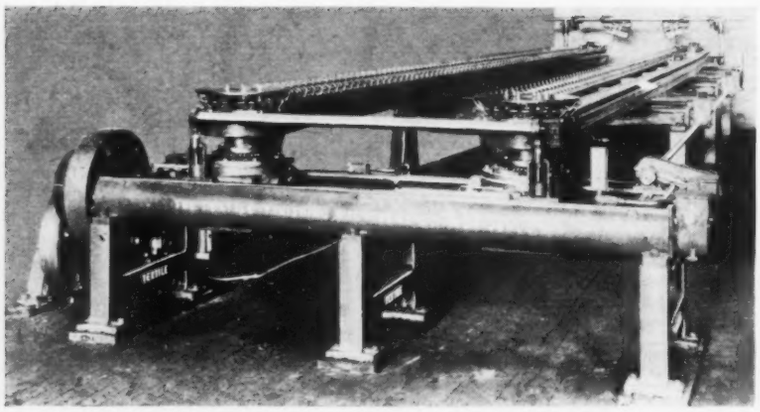
Technical Editor:

We are attaching two samples of spot fabrics that we are interested in. Can you give us some information as to how the spot is put on the cloth? (7933)

The sample clippings were made with swivel-woven Swiss dots. No. 1 is a voile ground; No. 2, a lawn ground. This type of decoration cannot be produced on the ordinary loom. It is usually woven on a fancy dobby or jacquard loom, not necessarily a multiple-box loom. The swivel attachment is extra, and is located on the lay of loom. It is used only for the purpose of inserting the spot or figure. The dobby or jacquard machine is used for the purpose of forming the proper warp shed for outlining the figure. The series of swivel shuttles do not cross the entire width of the loom; each figure, woven on the face of the cloth, requires a seperate set of small shuttles; and these shuttles are actuated much after the style of shuttles used on a ribbon or suspender loom. Swivel weaving is a very expensive operation and few, if any, of these looms are operated in this country.

Swiss dots on voile or lawn grounds have always been very popular in drapery fabrics, and millions of yards are now being woven for this purpose on the ordinary multiple-box loom; but the color spots are woven to show on one side of cloth and have to be sheared where the color does not weave into the ground.

NEW MACHINERY



Automatic Straightaway Tenter

THE improved automatic straightaway tenter, recently announced by the Textile-Finishing Machinery Co., Providence, R. I., is designed to meet operating conditions at the present high speeds to which these machines are subjected. The driving mechanism is so arranged as to be practically a separate, self-contained unit, thus eliminating considerable vibration and thereby increasing the life of the driving sprockets and chain. All driving parts turn in ball-bearings, while the gears driving the sprocket heads are enclosed in cast iron housings rigidly supported on the cross rails.

An electrically operated balanced mechanism is provided for adjusting the chain rails to vary the size of the machine for different widths of cloth. This arrangement, which is said to give freedom from binding of the draft shaft during the adjustment, is operated by push button control that is conveniently mounted on the cross rail. A lubricant retaining flange is provided about the end of the tenter rail to prevent grease from spotting the fabric.

The makers claim that in this machine the whip of the chain around the ends has been overcome, which, it is said, not only makes possible a higher tenter speed, but also eliminates breakage of the tenter links and reduces the wear on rivets. The new tenter frame is said to occupy less floor space than existing machines. The main drive may be supplied in any of the conventional types, either with motor and enclosed silent gearing, silent chain or Tex-rope drive, as preferred.

Circular Hose with Square Heel and Loose Welt

AS AN additional step toward improving the fit of circular hosiery, Scott & Williams, Inc., 366 Broadway, New York, has applied an arrangement for knitting a square type of heel to its Model-K spiral-float machine, which was equipped a short time ago with means for producing a gusset toe. In addition, the machine now produces a loose welt having increased elasticity. The sole is also improved.

The new heel, which is illustrated herewith, is produced by the insertion of some nineteen extra courses above the gore, which brings the gore line to a more vertical position. The machine narrows down six needles as usual. Then on every three reciprocations only two needles are taken out of action, instead of the usual three. One course is gained in this manner until 35 needles have been raised to inactive position. The needles are then picked up again in the usual manner, one course to each pick. In order that any puckering at the gore may be avoided, two loose courses of long stitches are knitted just below the gore line by a movable stitch cam traveling downward.

The additional fabric above the gore, by giving a knitted angle to the foot in its relation to the leg, as contrasted with an angle obtained by boarding, reduces wrinkling of the instep. This wrinkling is further lessened by the fact that the boarding takes place directly at the gore, which is at the widest part of the foot, and that as a result the knitted heel fits the wearer's heel more accurately. The location of the gore and the better fit of the heel prevent the stocking pulling either up or down when worn—the direction of pull being dependent on the length of the stocking.

The square heel has made possible slackening the double-sole stitches to give the same number of stitches per fabric inch in the sole as in the instep. It is therefore unnecessary to stretch the stocking on the

form to allow for the tightness of the spliced stitches; and tests have shown, it is reported, that there is consequently no danger of the foot shrinking in washing.

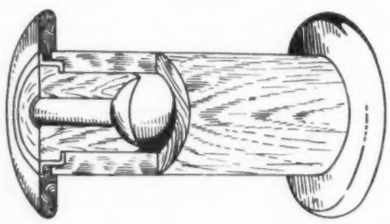
The loose welt is produced by drawing every alternate course longer. The changes from long to short stitch and vice versa are obtained by an alternate lowering and raising of the cylinder. In addition to improving the elasticity of the welt, the loose courses increase the production of the machine and reduce the number of chain links required, due to the fact that fewer total courses are knitted in the welt.

Bevel-Edge Traveler

THE Bowen patented bevel-edge ring traveler for rayon and silk throwing, designed to eliminate contact of the yarn or thread against angular edges, has been introduced by the U. S. Ring Traveler Co., Providence, R. I. This improved traveler, according to the manufacturers, has the advantage of permitting an unusually smooth swirling action of the yarn or thread in the twisting process, thus producing an even yarn or thread without the evidence of broken filaments frequently observed in the case of square-edge travelers.

Fiber-Head Spool

LESTERSHIRE SPOOL & MFG. CO., Johnson City, N. Y., has introduced an improved type fiber-head spool which, it is claimed, will resist about 20% more pressure exerted between the two heads than formerly. The redesigned fiber heads



are locked into place by means of a new patented locking ring of cadmium plated steel. The barrel is of maple and is recessed into the fiber heads to prevent splitting. The dogwood bushing fits inside the hardened steel locking ring and is securely glued into place to prevent loosening up. The makers state that the spool has been assembled into a rigid unit that cannot be pulled or twisted apart except by force sufficient to destroy the entire spool.

Compensated Rubber Belt

BY BUILDING up a duck and rubber belt on a curved surface, rather than on a flat surface as formerly, the Manhattan Rubber Manufacturing Division of Raybestos-Manhattan, Inc., Passaic, N. J., has developed a "Compensated" belt in which the excessive difference in stress between outer and inner plies when the belt is bent around a pulley is eliminated. The reduction in ply stresses during flexing is intended to eliminate rupturing of the outside ply and to prolong the useful life of the belt, as most belt fatigue occurs at the pulleys. The Compensated belt is expected to prove particularly useful where small pulleys are employed.

The accompanying diagrams are from a group of explanatory and performance charts, tables, and data which the manufacturer has assembled to show the character-

istics and qualifications of the new belt. Fig. 1 illustrates how a circumference of a circle or pulley varies with the diameter and consequently how the outside ply of a belt must be stretched to cover the same 180° that the inner ply covers on a smaller arc. The heavy arrows in Fig. 2 have been drawn to represent the ply tensions in a Compensated belt on a pulley of normal size; and this diagram is to be compared with Fig. 2, representing the former conditions which have been corrected.

Ply separation is said to be practically eliminated by the compensated or counterbalanced construction, as the critical stresses are evenly distributed in all plies and there is no tendency for one to move over another. The construction also serves to prolong the fastener life, as each ply holds the fastener with equal grip during these stresses.

Another feature in the Compensated belt particularly emphasized by the manufacturer is a high coefficient of friction or pulley adhesion on the pulley side. This is said to be a permanent, built-in quality, which permits the belt to be run loosely without loss of transmitted power. The lower tension resulting, it is pointed out,

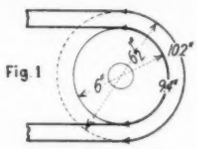


Fig. 1

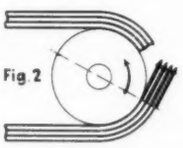


Fig. 2

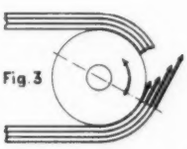
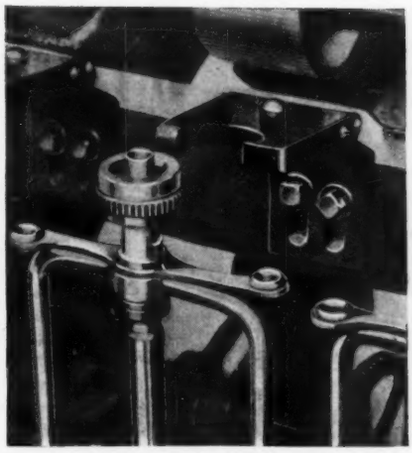


Fig. 3

increases the lives of bearings, belt, fasteners, and splices, and reduces the adverse effects of varying atmospheric conditions. The belt can be made endless if desired.

High-Speed Spindle

THE "Eclipse" high-speed spindle, manufactured by Prince-Smith & Stells, Ltd., Keighley, England, and sold in the United States by Atkinson, Haserick & Co., Boston, Mass., for dandy finishing, reducing and roving frames, is said to permit greater operating speeds with substantial savings in lubrication and power costs. The footstep bearing has a self contained oil well and is securely fixed in the bottom rail. In place of the usual collar, the makers have introduced a ball bearing, which is contained in a floating swivel housing, and this in turn is supported by an individual bracket attached to an offset rail. The top support, or steadier, consists of a ball bearing that is enclosed in a special sleeve, the outside circumference of which is notched. This outside sleeve is supported by an open bracket attached to the angle beam of the machine, and a locking spring is fixed to this bracket, the open end of which assumes a flexible contact with the notched bearing sleeve and holds stationary the outer race of the ball bearing. This design permits the spindle to be swivelled outward for doffing in the

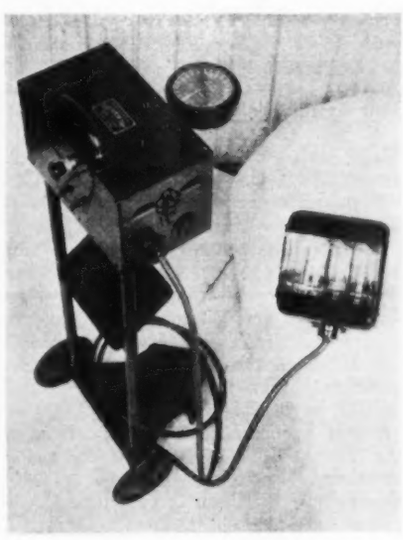


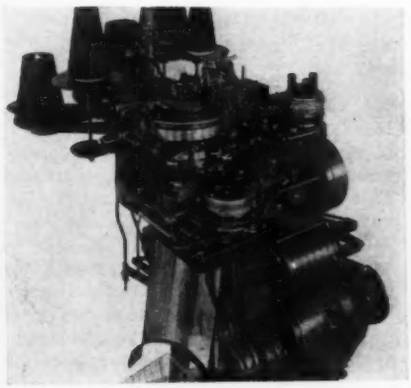
usual manner and back again into running position. The manufacturers state that this spindle can be installed on existing machines in the worsted industry.

Vibroscope

FOR counting the speeds of textile spindles, the Electrocon Corp., New York, has developed a new type stroboscope, known as the "Vibroscope," which is mounted upon a compact wheel chassis for convenience in moving about in narrow aisles. The complete instrument, except the handlamp in which neon tubes are mounted, is built into a strong metal box. The handlamp is strapped to a shelf on the chassis for transportation, but is held in the operator's hand when the instrument is in use. The box contains an accurately governed variable speed motor, standard models ranging in speed from 1,200 to 8,000 r.p.m., and the necessary electrical parts for flashing the neon tubes.

A tachometer is mounted on the motor shaft when the instrument is to be used for speed counting. Standard instruments operate on 100-120 volts a.c., but can be converted for d.c. operation. The Vibroscope is offered in two regular models, one with two neon tubes in the handlamp, and the other with three neon tubes. It is claimed that the light flashes from this instrument are of extremely short duration, thus making possible close study of machine parts moving at high speed.





Combination Circular Hosiery Machine

A NEW Banner "combination" machine offered by Hemphill Co., Pawtucket, R. I., combines all the features of the 12-step reverse-plating machine together with those of the newer Universal-stitch machine. The combination machine will knit three-color work, mesh and reverse-plated effects, mesh patterns and mock-wrap patterns on reverse-plated fabric. The reverse-plating work is entirely controlled from a 12-disk pattern drum with a single cam adjustment. A similar pattern drum controls the Universal-stitch equipment and three-color work is obtained by coordinating the two pattern drums in action. The machine will be made in all cylinder sizes from 2 to 3¾ in.

General Equipment

ALSO of interest to the textile field are the following improvements in general industrial equipment:

Photo-Electric Relay. General Electric Co., Schenectady, N. Y. Midget relay unit, consisting of a phototube, a Pliotron amplifying tube, a sensitive relay, an adjustable potentiometer, and associated apparatus, all mounted on a steel base. Unit will operate on light impulses of one-fifteenth of a second duration.

Rotax Electric Controller. Foxboro Co., Foxboro, Mass. Electrically operated control instrument, equipped with new commutator type contacts, which is claimed to give more accurate control of temperature, pressure, humidity, flow or liquid level.

Static Eliminator. Simcoe Mfg. Co., Philadelphia. New ionizing type of static eliminator, said to have a radius of activity of 2 ft., as against 1 to 2 in.; this device is claimed to be more effective than former types of high voltage static eliminators and is particularly adaptable in the case of fast moving material.

Automatic Controls. Minneapolis-Honeywell Regulator Co., Minneapolis. Improved line of controls having specific applications on warm-air furnace fans, refrigeration units, and various types of industrial equipment.

Steam Pumps. Worthington Pump & Machinery Corp., Harrison, N. J. New line of horizontal duplex steam pumps, built in wide range of capacities, for handling either water or chemical solutions.

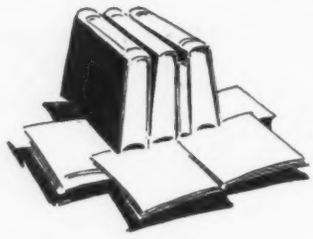
NEW PUBLICATIONS

COMMON SENSE APPLIED TO MOTION AND TIME STUDY; By Allan H. Mogensen; McGraw-Hill Book Co., New York; 228 pp.; illustrated; $2.50.

This volume brings together most of the theory and practice on motion and time study up to date. The material has been compiled by A. H. Mogensen, assistant editor of *Factory and Industrial Management* and includes articles which have appeared in that magazine as well as the subject matter of talks delivered by Mr. Mogensen before groups throughout the country and a booklet prepared by him for use at Massachusetts Institute of Technology. The volume includes analyses of motion-picture application to the study and effects on plant layout and machine design. It is fully illustrated with charts, tables and photographs.

GLASGOW AND THE CLYDE; printed for Development Board for Glasgow and District, 72 St. Vincent St., Glasgow, Scotland

Textile manufacturers who may consider establishing mills abroad will find much of interest in this brochure on Glasgow's availability as a site for industrial plants.



Supplementing general statistics on water power, labor, electricity, the volume analyzes the various divisions of industry in the Scottish metropolis. Cotton yarn and manufactures is third largest export.

Business Literature

Centrifugal Pumps. Lawrence Pump & Engine Co., Lawrence, Mass. Bulletin announcing Type "E" Electropump for general pumping service. Includes engineering data.

Oilers. The Lunkenheimer Co., Cincinnati. Booklet describing the construction, operation and application of new type bottle oilers.

Temperature Controls. The Foxboro Co., Foxboro, Mass. Bulletin No. 177 describing new line of temperature controllers.

Steam Boilers. Commonwealth Electric & Mfg. Co., Boston. Booklet describing electric-heated automatic steam boilers for process steam.

Pulleys. T. B. Wood's Sons Co., Chambersburg, Pa. Circular describing cast iron pulleys.

Torches. The Linde Air Products Co., New York. Illustrated pamphlet describing the range of work and types of applications for which Prest-O-Lite torches are intended.

Steel Chains. Link-Belt Co., Chicago. Illustrated catalog of complete line of chains and sprocket wheels. New and useful sizes are offered for the first time.

Meter. Weston Electrical Instrument Corp., Newark, N. J. Circular describing new foot-candle meter for use in making lighting surveys.

Silk Moistener. Strickland Pattern Works, Chattanooga, Tenn. Circular describing application of silk moistening appliance in full-fashioned hosiery mills.

Air Conditioning. B. F. Sturtevant Co., Hyde Park, Boston, Mass. Speed heater-cooler for heating in winter and cooling in summer, described, with capacity and temperature tables.

Bobbin Cleaning. Terrell Machine Co., Inc., Charlotte, N. C. *Termaco Times* quotes cotton mill testimonials on advantages of Type K bobbin stripping machines; stresses money-saving aspects.

Screw Threads. Dardelet Threadlock Corp., New York. Applications and characteristics of Dardelet self-locking screw thread described, with illustrations, in third edition of Dardelet bulletin No. 5.

BUSINESS NEWS

TEXTILE-FINISHING MACHINERY CO., Providence, R. I., has entered into an agreement with Roessler & Hasslacher Chemical Co., New York, to build the latter's patented kier for bleaching with peroxide.

G. W. SEARELL, formerly with Kahn & Feldman, Inc., New York, has joined the sales organization of Jacques Wolf & Co., Passaic, N. J., where he will specialize on products for silk and rayon throwsters, knitters and dyers. Mr. Searell was previously with the General Silk Corp.

BRISTOL CO., Waterbury, Conn., on Oct. 1, established a British factory at London, England, under the name of Bristol's Instrument Co., Ltd. Since 1889, the Bristol Co. has enjoyed a substantial trade with Great Britain on its complete line of recording instruments, selling activities in that country being handled by J. W. & C. J. Phillips, Ltd., as sales agent. Howard H. Bristol, president of the Bristol Co., is chairman of the board of the English company and Alexander L. Dugon, of J. W. & C. J. Phillips, Ltd., is vice-chairman and managing director.

STEPHENS-ADAMSON MFG. CO., Aurora, Ill., has acquired the United States right to manufacture and distribute the English Redler conveyor which is claimed will convey horizontally, vertically, up inclines and around corners.

STUART F. BROWN, treasurer and manager of the Whitinsville Spinning Ring Co. and Mrs. Brown were passengers for England on the Britannic from Boston on Nov 19. Mr. Brown will confer with Eadie Bros. & Co. of Paisley and Manchester, under whose license his firm manufactures the new self-lubricating spinning and twister rings in the United States and Canada.

HEVEATEX CORP. removed its general office and plant to Fells Plant, 78 Goodyear Ave., Melrose, Mass., on Nov. 21.

M. C. MILLER, M. E., Manville, R. I., well-known knitting authority and author of "Principles of Knitting," as well as numerous articles in TEXTILE WORLD, is offering a weekly analysis of all knitting patents issued by the United States Patent Office on a service-subscription basis, covering the prior art and its effect on the validity and value of each patent. Supplementary services will include definite advice on the desirability or necessity of purchasing or defending specific patents and on the advisability of applying for patent protection on specific inventions.

FULTON SUPPLY CO., Atlanta, Ga., jobbers to the southern textile industry, are now handling all types of Alemite lubricating equipment, according to announcement by George Winship, president of the concern.

LINK-BELT CO. has appointed George M. Sharer sales manager of its eastern division, with headquarters in Philadelphia, with direct supervision of sales of all of the company's offices in the Atlantic Coast States. He has been connected with Link-Belt in Philadelphia for 32 years.

C. S. TATUM, manager of the Pilot Mills, Raleigh, N. C., and associates, have established a plant in Charlotte, N. C., for the manufacture of sizing materials used in textile manufacturing.

FARREL-BIRMINGHAM CO., INC., Buffalo, N. Y., has appointed E. J. von der Heide as sales representative to handle Farrel-Sykes gears, gear units and gear generators in the Middle West territory. Mr. von der Heide is a mechanical engineer of experience. His headquarters are at 824 Miami Savings Bldg., Dayton, Ohio.

FRITZ SJOGREN, formerly associated with the Nyanza Color & Chemical Co., has been appointed New England manager for the Commonwealth Color & Chemical Co. with offices at 12 Pearl St., Boston, Mass.

CALCO CHEMICAL CO., INC., Bound Brook, N. J., has purchased the business, good will and manufacturing facilities of NOIL CHEMICAL & COLOR WORKS, INC., New York, makers of direct, developed and acid dyestuffs. When ample stocks have been provided operations will be transferred to Calco's main plant.

MOORE-HANDLEY HARDWARE CO., Birmingham, Ala., has been appointed distributors and direct representatives for the entire Link-Belt general line of machinery in Birmingham territory.

E. S. DRAPER, landscape architect, with headquarters in Charlotte, N. C., has opened a branch office in Washington, D. C., at 726 Jackson Place.

COLSON CO., Elyria, Ohio, casters and wheeled equipment, which has been operating in friendly receivership since May 13, 1932, was recently adjudged solvent in the Federal Court and a petition in involuntary bankruptcy dismissed.

PRECISION GEAR & MACHINE CO., which which has been operated at Gastonia, N. C., for several years, moved its plant to Charlotte, N. C., Nov. 1, and is now located at 115-121 West Eighth St.

ROBLEY D. STEVENS has been appointed Philadelphia representative for Geo. A. Schmidt & Co. and M. H. Fairchild & Bro., of Chicago, for sale of their soaps.

WALTER F. PERKINS, who has been manager of the Harrison (N. J.) Works of the Worthington Pump & Machinery Corp. since 1927, has resigned to become vice-president and general manager of the Bartlett Hayward Co., Baltimore, Md. He is succeeded by Hugh Benet.

A. L. FREEDLANDER, vice-president and factory manager of the Dayton Rubber Mfg. Co., was a passenger on the Graf Zeppelin from South America to Germany when that airship made its fourth trip from Pernambuco, Brazil, on Oct. 29.

INDUSTRY-WIDE EVENTS

Foundation's Research Studies Progressing

At a meeting of the board of directors of the Textile Foundation, held in Washington, Nov. 17, Stuart W. Cramer, treasurer, reported that it was hoped to have the results of the study of cotton goods marketing ready for distribution early in 1933. Progress is also being made in the study of silk and rayon marketing, initiated recently. The report on wool goods distribution was released some months ago.

Satisfactory progress is being made on the research studies being conducted by the 20 fellowships and scholarships provided by the Foundation.

The directors authorized extension of the research on the disposal and recovery of textile wastes now carried on at the University of North Carolina. This extension will make possible additional field work.

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Arkwright Bicentennial

This month marks the 200th anniversary of the birth of Sir Richard Arkwright, the famous textile inventor who gave us the roller spinning frame. Arkwright was born of poor parents in Preston, Lancashire, England, on Dec. 23, 1732. After working as a barber in Bolton during his twenties and early thirties, he became, as a result of his invention in 1767, an important figure in the industrial revolution and perhaps the most noted inventor in textile history. In addition to the spinning frame, he contributed numerous improvements to carding and roving. Mills were successfully established and operated by Arkwright at Nottingham and Cromford.

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Tariff Fight Expected

It is a certainty that reductions in tariff rates will take place in a special session to be called shortly after the Presidential inauguration, stated Sinclair Weeks, president of the Home Market Club, at the annual meeting, in Boston, Nov. 16. Consequently, he observed, there never was a time in the history of the club that called for more determined efforts than the present.

"We must be prepared to present facts pertaining to the industries of America," he said. "We may not be sure of obtaining justice in all cases, but we can firmly present the truth and demand that tariff revenue shall be so raised that mills and factories shall not be closed and operatives employed therein stricken with starvation because of ruinous competition from abroad."

Somewhat more hopeful, however, was this statement made by Mr. Weeks: "Although confronted with another experiment in tariff tinkering, there is justification for the assumption that the needs of industry will receive some consideration. That the President-elect recognizes the responsibility, as exemplified by the proposed conferences shortly to be held, encourages the country in the hope that at least a degree of caution and prudence will direct the processes of revision."

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Arbitration Offered for Bondholders' Protection

The American Arbitration Association offers an arbitration plan for the cooperative protection of bondholders on any property on which obligations under bond issues have not been met. Parties to deposit agreements which contain a standard arbitration clause may obtain services of impartial and qualified arbitrators to pass upon plans for rehabilitation of property, upon fees and expenses of committees and counsel engaged in the reorganization and upon such other matters as may be referred to arbitration under the agreement. The association maintains an information service on this phase of its work as well as other applications of arbitration.

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Plant Modernization Discussed

Discussion of the economic replacement of equipment featured the industrial session of the Eighth New England Conference, held under the auspices of the New England Council. Ralph Flanders, of Jones & Lamson Machine Works, outlined the course of economic recovery beginning with the improvement in bond prices, the opening up of re-financing and subsequent issuing of new bonds at desirable prices. Rehabilitation, he said, is one of the normal processes of recovery.

It was announced that, included in nearly a million dollars' commitments for industrial betterment, are $200,000 for the Souhegan Woolen Mills, Wilton; $324,000 for modernizing 27 other woolen mills; and about $30,000 for improving the woolen mill of Joseph Noone's Sons Co. at Peterboro.

Textile Calendar

Silk Assn. of America, annual dinner, New York, January, 1933.

National Knitted Outerwear Association, exposition, Grand Central Palace, Feb. 13 to 17, 1933.

Knitting Arts Exhibition, Commercial Museum, Philadelphia, Apr. 24 to 28, 1933 (tentative).

National Cotton Week, May 15 to 20, 1933.

American Society for Testing Materials, annual meeting, Stevens Hotel, Chicago, June 26 to 30, 1933.

Fourteenth Exposition of Chemical Industries, Grand Central Palace, New York, Dec. 4 to 9, 1933.

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Coffin Addresses Southeastern Conference

Howard E. Coffin, president of General Textiles, Inc., was one of the speakers at the Southeastern Conference held in Birmingham, Ala., Nov. 29 and 30.

Hugh Macrae, of Wilmington, N. C. was re-elected president of the Conference, and Donald Comer, of Birmingham, and Miss Jean Coltrane, Concord, N. C., were elected vice-presidents.

Mr. Coffin outlined the type of program which the Conference must develop if it is to aid in the restoration of economic stability.

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Group Action on Piracy

An association of all those in the textile industry concerned with protection of designs from piracy for inforcement of the rights of the originators of designs was suggested by Clarence S. Brown, of Clarence S. Brown & Co., New York, at a luncheon meeting sponsored by the National Alliance of Art and Industry in New York, Dec. 5. Mr. Brown does not feel that it is necessary to wait for changes in patent or copyright laws, but that group action will kill off the design pirate. Irene Blunt, assistant secretary of Silk Association, reported on the improved service offered by the Patent Office in handling design patents.

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Fashion Effort Must Become Business Science

In a strong plea to fashion workers to aid in the development of fashion as a business science, Paul H. Nystrom, professor of marketing, Columbia University, addressing the Fashion Group in New York, Nov. 30, said that foreign names of designers and producers have never meant so little to manufacturers or consumers as at present.

Dr. Nystrom said there are three outstanding factors in American design becoming important in popular fashion: First, the importance of developing greater ability in artistic design in this country, second, increased encouragement of American design by the owners and managers of our fashion industries, third, the development of a better and more scientific understanding of the nature of fashion.

TEXTILE WORLD'S

Cotton Digest

THE formation of General Textiles, Inc., to sell the product of the mills now represented by Hunter Mfg. & Commission Co., cannot fail to exert a stabilizing influence upon the market. The uncertainty which for months has clouded the future of this important group has been lifted. Furthermore, the election of Howard E. Coffin as president of the new company brings to the cotton industry a man who has proved his worth in other fields; and who, through his public utterances, has demonstrated his belief in constructive cooperation. Finally, the part which the mills themselves will play in the conduct of the selling company promises a degree of production-merchandising coordination, so essential under present conditions.

This whole development is one more step in the substitution of organized leadership for disorganization.

W. D. Anderson Heads New Print Cloth Group

The print cloth group of cotton manufacturers formed a separate association, not connected with any existing organization, at a meeting held in Greenville, S. C., Nov. 29. W. D. Anderson, Sr., of Bibb Mfg. Co., Macon, Ga., was named chairman for the first fiscal year, and W. P. Jacobs, of Clinton, S. C., secretary of The Cotton Manufacturers Association of South Carolina, was elected secretary-treasurer.

The new association, it is understood, will collect and disseminate data and statistics on production and sales, cooperating with selling agents and others in the primary markets. The executive committee consists of the following:

Captain Ellison A. Smyth, Balfour, N. C.; W. D. Anderson, Sr., Macon, Ga.; Fred W. Symmes, Union, S. C.; T. M. Marchant and Ellis M. Johnston, Greenville, S. C.; J. C. Evins, Clifton, S. C.; Dr. W. C. Hamrick, Gaffney, S. C.; W. B. Cole, Rockingham, N. C.; Ellison S. McKissick, Easley, S. C.; Walter S. Montgomery, Spartanburg, S. C.; C. M. Bailey, Clinton, S. C.; James C. Self, Greenwood, S. C.; James P. Gossett and M. P. Orr, Anderson, S. C.

•

Sales Decline—Spindle Activity Increased

Spindle activity for October was 97% of single shift capacity, according to the report of the Bureau of the Census, showing an increase over the rate of operation for September. Sales of cotton goods, on the other hand, were only 59.1% of production, as shown in the monthly statistics of The Association of Cotton Textile Merchants in New York, and unfilled orders decreased 21.8%. October production was 253,109,000 yd., an increase of 11% over the weekly rate for September, and billings were 246,562,000 yd., or 97.4% of production. Mill stocks on Oct. 31 were 166,668,000 yd., an increase of 4.1% over the total on Sept. 30, while unfilled orders stood at 347,123,000 yd. The aggregate number of spindle hours reported by the Government for October was 7,045,544,610, or 97% of single shift capacity, as compared with 94.6% for September, and 72.4% for August.

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Merges with Converters

At a meeting of the Shirting Fabrics Association held in the Arkwright Club, New York, Nov. 18, a proposal for merging that organization as a division of the Textile Converters Association was considered and favorably acted upon by the members.

Lester R. Walls, of the Riverside & Dan River Cotton Mills; Dalton Francis, of Pacific Mills; T. E. Hall, of M. C. D. Borden & Sons; Thomas W. Estes, of J. P. Stevens & Co. and Clarence S. Brown, of Clarence S. Brown & Co., were appointed a committee to consummate details of the amalgamation.

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Payrolls Increased 150%

A graphic picture of the effect of the textile improvement upon employment is provided in the results of a study made by Bliss, Fabyan & Co., Inc., and released by them last month. At that time, the study showed that the number of operatives in the 22 mills associated with this company had been increased 153% since July 30 and payrolls in the same period had been increased 150%. The announcement added that, as a result of orders then on the books for future delivery, it was expected that the same mills would continue operations at this rate for some months to come. Had there been a commensurate increase in employment and payrolls in other major industries, the company observed, most economic and social problems would be well on the way to solution.

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Amory, Browne & Co. Liquidating

Amory, Browne & Co., New York, after a career in the cotton goods commission business of almost a full century, began liquidation on Nov. 1. Founded in 1833 it operated for many years with six partners, three in Boston and three in New York. On July 1, 1932, a corporation supplanted the partnership then comprising Messrs. Bird, Meffert, Bramhall and Henderson. The liquidation of this corporation is now in progress.

•

Meritas Mills Changing to Cotton Suitings

Meritas Mills, Columbus, Ga., a unit of the Standard Textile Products Co., operating 59,000 spindles and 1,400 looms, has changed over part of its equipment to permit the manufacture of cotton suitings and materials for men's pants. L. Bachmann & Co., New York City, it is said, will sell the new line.

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Minot Hooper to Continue In Sheeting Business

Minot Hooper & Co., formerly selling agents for the "Dwight Anchor" brand of sheets recently purchased by Nashua Mfg. Co. from Dwight Mfg. Co., will continue in the sheeting business and will merchandise the product of the John P. King Mfg. Co., Augusta, Ga., where it is reported that an initial installation of 300 looms will be made.

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Appoint Edwin Hadley, Jr.

Edwin Hadley, Jr., is now associated with Waterman, Currier & Co., sales agents for carded and combed yarns, making his headquarters in the Charlotte (N. C.) office shortly after his father's death. Miss Pauline Hadley continues her connection at Charlotte.

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Hyde-Rakestraw Moves

Fred A. Rakestraw has announced that Hyde-Rakestraw Co., located in quarters on Chestnut St., Philadelphia, for last 38 years, will be moved to a five-story building at 28 South Sixth St., about Jan. 1.

12,727,000 Bales

Government cotton crop estimate, issued Dec. 8, of 12,727,000 bales marks a gain of 780,000 bales over estimate of Nov. 1.

•

Bernard Cone Assails Harriman Plan

The proposed excise tax on cotton, generally known as the Harriman plan, designed to yield five cents a pound on all cotton used by domestic mills, the revenue thus derived to be distributed among farmers who agree to curtail their cotton acreage, is meeting with opposition in the cotton textile industry.

Commending the North Carolina Cotton Manufacturers Association for its recent action in passing a resolution asking members of Congress to oppose such unsound legislation, Bernard M. Cone, president of the Proximity Mfg. Co., Greensboro, N. C., when questioned by TEXTILE WORLD, declared that the enactment of an excise tax on cotton would have the following undesirable results: (1) The sale of cotton goods by mills would be retarded; (2) many mills, already losing money, would be forced to close to avoid further financial losses; (3) the tax upon cheaper and coarser goods would be proportionately greater than upon lighter and more expensive fabrics; (4) the use of substitutes for cotton, including jute, rayon, silk and wool, would tend to increase; and (5) American mills would be crippled in their efforts to compete with foreign mills in the export markets.

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Would Allot More Cotton to Red Cross

In a letter to members of Congress, James W. Cox, Jr., president of Sibley Mfg. Co. and Enterprise Mfg. Co., Augusta, Ga., urges that the remaining Farm Board cotton, or a substantial part of it, be turned over to the Red Cross to be exchanged for piece goods and manufactured garments as was done with the previous allotment. Mr. Cox pays a tribute to the way in which the task was performed and points out the salutary effect of the arrangement upon employment.

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Cotton Price Comparisons

The following are prices of key items in the cotton industry:

	Dec. 1	Nov. 1	Dec. 1 1931	Dec. 1 1930
Spot Cotton, N. Y.	5.95	6.10	6.10	10.40
Ditto, high previous month	7.15	7.15	6.70	11.85
Ditto, low previous month	6.15	6.15	6.10	10.55
Peeler Comber	6c	6¼c	5¼c	9c
White Spooler Waste	4c	4¼c	4¼c	8c
10s frame spun yarn	13c	14¼c	14c	20c
10s/2 carded skeins	13c	14¼c	14¼c	21c
20s/2 carded peeler warps	15c	16c	17c	22¼c
60s/2 combed peeler warps	43c	45c	42c	56c
60s/2 mercerized cones	55c	60c	52c	71c
37-in., 3-yd. drill	5c	5¼c	4¼c	7¼c
38½-in. 64x60s	3¼c	3¼c	3¼c	5¼c
36-in. 4-yd. 56x60s	3¼c	4¼c	4¼c	6¼c
Denim, 2.20s	10¼c	10¼c	9¼c	12c

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Cotton Mill News

LOWE MFG. CO., Huntsville, Ala., and the Lafayette (Ala.) Cotton Mills, have been acquired by Donald Comer and associates. In announcing the purchases, Mr. Comer said that efforts would be made to resume operations at both mills at the earliest available date. Purchase price of Lowe is reported at $286,720.

POWDRELL & ALEXANDER, INC., Danielson, Conn., reports an October sales volume 35% greater than October 1931.

AMERICAN THREAD CO., Willimantic, Conn., has announced another wage revision effective Dec. 5. While no figure is given it is understood to be a cut up to 10%. The Kerr Mills of the same company in Fall River took similar action.

COLUMBUS (Ga.) MFG. CO., reported net loss of $60,559 for the fiscal year ended Aug. 31, 1932, as compared with a net loss of $69,824 for the preceding year.

RUSHTON COTTON MILLS, Griffin, Ga., is having the Aldrich one process picker system installed, replacing other equipment of this kind.

CALLAWAY MILLS, INC., Manchester, Ga., has undertaken considerable modernization work, including construction of a new roof over the spinning, slashing and part of the weave room, and the installation of 24 Saco-Lowell cards and long draft attachments for 73 spinning frames.

LANE COTTON MILLS, New Orleans, La., have completed their addition, and 450 automatic looms from Pemaquid Mills, New Bedford have been shipped south under supervision of Joseph M. Lassonde of Fall River, for installation.

CHASE CORP., Fall River, Mass., formed by C. B. Chase, formerly agent of Stevens Mfg. Co., and Walter E. O'Hara has leased three floors in Flint No. 2 mill to make up bedspreads, curtains and draperies. Fabrics will be bought but later looms may be installed.

GRINNELL MFG CORP., New Bedford, Mass., annual report showed shrinkage in quick assets of $481,780 for the year ended Sept. 30, 1932. Operating loss was $211,780.

WAMSUTTA MILLS, New Bedford, Mass., report net loss for fiscal year ended Sept. 30, 1932 as $414,586 of which $147,636 is depreciation.

CLARK THREAD CO., Newark, N. J., has shipped a unit of 45,000 spindles to J. & P. Coats, Pawtucket, R. I., including openers, cards, combers, etc. The Clark company has also shipped 5,000 spindles from Newark to its new plant at Austell, Ga., supplementing 40,000 previously sent south. Joseph M. Lassonde, Fall River, Mass., has been in charge of shipping and erecting.

NASHUA (N. H.) MFG. CO's. annual report showed a complete absence of bank loans, $1,000,000 having been paid off.

STERLING COTTON MILLS, Franklinton, N. C., were placed in receivership Nov. 1. Don P. Johnston, Wake Forest, N. C., was appointed receiver. Claims amounted to approximately $80,000.

CASWELL COTTON MILLS, Inc., Kinston, N. C., which have been in the hands of F. Clyde Dunn, receiver, have been sold to undisclosed interests for $61,500, and will be placed in operation at an early date.

CITY COTTON MILLS, Newton, N. C., are building a structure to house another new napper.

WADE MFG. CO., Wadesboro, N. C., has installed 36 new Crompton & Knowles looms.

GOODYEAR TIRE & RUBBER CO., Akron, Ohio, has started dismantling the mill of GOODYEAR (Conn.) COTTON MILLS, INC., and is shipping the machinery to its other plants at Atco and Rockmart, Ga. The mill, which for 20 years, employed 600 hands, has been closed since June. It was built by Caleb Williams in 1827.

ESMOND (R. I.) MILLS have had a combined water filtration and Inversand water softening plant installed by Hungerford & Terry.

VICTOR-MONAGHAN MILLS, Appalache plant, Arlington, S. C., is having two one-process pickers installed by the Southern Spindle & Flyer Co., Charlotte, N. C. Three old spinning frames are being replaced with four new Woonsocket 160-spindle frames.

LANCASTER (S. C.) COTTON MILLS recently enlarged their Chester, S. C., plant and Ballard Sprague & Co., New York, has now completed the 182-foot tile chimney for the new boiler plant there. An artesian well has been drilled by the Virginia Machinery & Well Co., Richmond, to obtain water for the steam plant.

TEXTILES, INC., York, S. C., a South Carolina corporation, has been formed by the merger of the LOCKMORE COTTON MILLS, of York, and the WYMOJO YARN MILLS, of Rock Hill. Authorized capital stock of the new corporation, the ownership of which is identical with that of Textiles, Inc., Gastonia, N. C., is $125,000, consisting of 1,250 shares of $100 par value stock.

TEXTILE WORLD'S

Wool Digest

THE Committee on Scope, of the Advisory Council of the Wool Industry, has passed the ball back to the individual associations. "We believe the industry does not desire to set up another trade organization . . .," it reports. "Existing organizations within the industry should function for their own groups and be interfered with as little as possible."

Those who feel, as do we, that an active super-organization representing manufacturers, wholesalers, cutters-up, retailers, and growers, is not a practical possibility, will not quarrel with the committee's recommendation that the Advisory Board remain advisory.

However this increases, rather than decreases, the responsibility for action resting upon the several associations. Will the manufacturers respond with whole-hearted support of the many activities suggested? The chairman of the Advisory Committee was frankly pessimistic as to the outlook for such response. This challenge has been thrown out before, with little effect. Will it be met this time?

May Revive Wool Census

Efforts to revive the quarterly wool stock reports of the Department of Agriculture are to be made this winter, it is understood. The stock reports were discontinued two years ago because of lack of cooperation. Since then there has been no accurate measure of the amount of wool on hand in this country.

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Rise in Patterned Goods

There will be increased interest in well-styled pattern goods for men's wear next spring in the higher price ranges. It is necessary more than ever to make evident the difference between the lower priced staples or the more commonplace fancies, and the finer goods for which higher prices must be obtained. This is the trend which has already started interest in Glen plaids and other effects which are a departure from the ultra-conservatism of the recent past. They may foreshadow the advent of more elaborate and striking patterns.

•

Ashby Heads Blanket Men

H. M. Ashby, president of the Kenwood Mills, Rensselaer, N. Y., was elected president of the Wool Blanket Manufacturers' Association, at the annual meeting held in New York on Nov. 10. Mr. Ashby succeeds Thurmond Chatham, president of the Chatham Mfg. Co., who had been head of the association for the last two years. Mr. Chatham was made vice-president; J. P. Linnen, of North Star Woolen Mills, continues as secretary-treasurer.

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Palm Beach Now for Women's Wear

Goodall Worsted Mills have entered the promotion of their Palm Beach lines in the women's wear field. Models showing attractive garments have featured several recent style shows.

•

Turnbull Argues Stability

Periods of active demand have become more and more seasonal," said President R. L. Turnbull at the annual meeting of the Boston Wool Trade Assn. on Nov. 15. "This year we have had but two brief periods of active mill buying, with intervening lengthy periods of inactivity and dullness.

"Knowing in advance that these dull periods will recur, if prices are lowered simply because of temporary lack of demand, it is difficult to see how this trade can prosper. To lower the price of wool while the manufacturer is trying to maintain the price of cloth is the quickest way to disrupt the entire structure of our industry, as the goods market has never been more sensitive than now to the trend of wool prices."

Mr. Turnbull was re-elected president of the association. Edmund F. Leland was chosen vice-president and Nathaniel Perkins secretary and treasurer.

•

Webb Again Heads Philadelphia Group

Herbert K. Webb was reelected president of the Philadelphia Wool & Textile Association at its annual meeting Nov. 9. The other officers reelected are Joseph S. Lord, first vice-president; James Bateman, second vice-president; J. Elwood Moore, treasurer, and Frank D. Levering, secretary.

A movement was started for meeting possible efforts after March 4 to reduce the clean content duty of 34c. a pound on wool.

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World Wool Figures

Bureau of Agricultural Economics, Washington, D. C., estimates total wool production in 19 countries for 1932 at 2,793,000,000 lb. which is a decline of 14,000,000 lb. or ½ of 1% from the record clip of 1931. The 19 countries supply about 80% of the world clip outside of Russia and China.

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Renews Brion Contract

American Woolen Co. has renewed its contract with Paul Brion, fabric and style creator of Paris, as result of satisfactory results of the first year of that alliance. Lionel J. Noah, president of the company, is enthusiastic over the results of teaming up French designing with American manufacturing.

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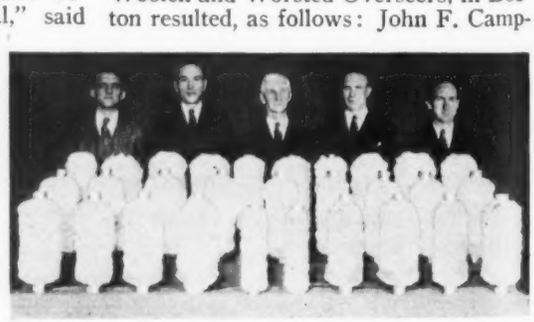
Overseers Elect

The election held at the recent meeting of the National Association of Woolen and Worsted Overseers, in Boston resulted, as follows: John F. Camp-



Individual combing of separate fleeces, hitherto thought an impossibility, has been accomplished at Lowell (Mass.) Textile Institute by members of the Wool Department and Prof. J. F. Wilson, Department of Animal Husbandry, University of California, to determine the effect of various sheep-raising conditions on wool tear. Behind the French-combed fleeces illustrated above are the men who took part in the experiments: Profs. J. C. Lowe, J. F. Wilson, E. H. Barker, R. L. Brown, and J. H. Kennedy, Jr.

bell, Providence, R. I., president; Abraham L. Booth, Woonsocket, R. I., first vice-president; John J. Fanning, Baltic, Conn., second vice-president; John C. Marley, of Lawrence, Mass., third vice-president. Thomas Buchan, of Hough's Neck, was re-elected treasurer, and P. J. Harney, of Quinebaug, Conn., secretary of the beneficiary committee. James J. Burns, of Washington, R. I., was again chosen secretary, as were the three trustees: Robert J. Harrington, of Dalton; James Wilson, of Providence, R. I., and P. J. Harney.

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Draper Retires from Government Wool Agency

H. B. Embach, general manager of the National Wool Marketing Corp., Boston, announced Nov. 10 that Draper & Co., Inc., in charge of sales for the National since its organization in 1930, will retire on Dec. 31, 1932, and that thereafter L. U. Edgehill and Stanley T. Carle will be in charge of this department.

"This step," said Mr. Embach, "was taken in the interest of economy and with approval of all parties concerned."

Mr. Edgehill was for a number of years a partner in the wool house of Hallowell, Jones & Donald and joined the Draper organization in January, 1930. Mr. Carle was for 25 years a member of the firm of Jeremiah Williams & Co., Inc., and became associated with Draper in 1931 when the Williams firm liquidated.

It is understood that Draper & Co., Inc., will take over as headquarters the old Union Wool Co. Building at 421 Summer street. Draper & Co., Inc., will, after Jan. 1, 1933, resume operations as wool merchants.

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Turn from Year's Peak Activity Comes

October activity of machinery in the wool goods industry showed a further gain from September and was considerably better than October of a year ago. Spindles, both woolen and worsted, ran about 73% of maximum single shift capacity and wide looms were 65.5%. The fact that activity of combs fell from 105.5% in September to 100.3% in October suggests that the seasonal turn has come. Wool consumption for October showed this decline in amount of wool going into process, with 42,423,444 lb. against 46,054,989 lb. for September which was the high for the year. Low for the year was May with 16,519,325 lb.

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Wool at London

Prices received for wool at London auctions recently (using rates of exchange current at the time) follow: Nov. 25, 64s 23.1c., 48s 10.5c.; Oct. 13, 64s 25.8c., 48s 11.1c.; Oct. 7, 64s 25.9c., 48s 11.5c.; Sept. 23, 64s 26.8c., 48s 11.9c. The price in pence also declined.

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Diagonal Weaves for Spring

Diagonal weaves with napped face are highly regarded for women's wear for next spring. Rabbit-hair mixtures are important in similar weaves. There is said to be a trend to develop general purpose fabrics suitable for coats, suits and dresses for both women and children, to reduce necessary stocks and to concentrate on big volume runs in the mill. The popular price range for women's wear is from 85c. to $1.50 per yard.

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Labeled Blankets Watched

The advent of Jan. 1 means also the start of the experiment in labeling percentage of wool content on part wool blankets. Manufacturers appear to be ready but there is a new undercurrent of resistance among some retail buyers who say they will not accept blankets labeled "Not less than 5% wool" or that they will remove such labels. Leading retailers have agreed however to cooperate and have set standards for advertising part wool blankets in which the percentage must be given fairly prominent display.

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Price Trends in Wool

The following are prices of key items in the wool industry. Current prices are given with comparisons covering a month ago, a year ago and two years ago:

	Dec. 1	Nov. 1	Dec. 1 1931	Dec. 1 1930
Fine and fine med. territory	$0.42½	$0.43	$0.54	$0.69
Ohio ⅜s	.20½	.21	.23½	.28½
Texas, 12 mths	.44	.47	.56½	.72
Tops, fine, 64-66s	.63	.68	.81½	.96
Average ⅜s	.54	.56	.62½	.74
High ¼	.51	.53	.54	.71
Noils, fine	.34	.35	.32	.52
2-40s 60s wstd yarn	.95	1.04	1.20	1.42½
3192 serge	1.20	1.27½	1.68½	1.96½

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Wool Mill News

Leon Insler & Bro., New Haven, Conn., has taken a plant in Milford from Edwin Reeves and will install machinery for the manufacture of women's dress goods. Operations start Jan. 1.

Schuster Woolen Co., East Douglas, Mass., has work under way on an addition to mill, including improvements in present plant, for which general contract was recently let to the Fiske-Carter Construction Co., Worcester, Mass., estimated to cost about $27,000. Cole & Kimball, 101 Milk St., Boston, Mass., are engineers.

Wyandotte Worsted Co., Waterville, Me., is now operating three shifts and on Dec. 1 was already one month ahead of its 1931 production.

Botany Consolidated Mills, Inc., in equity receivership, abandoned the plant of Garfield (N. J.) Worsted Mills and turned it over to the city for unpaid taxes.

Bush Woolen Mills, Dresden, Ohio, has installed new machinery and increased operating schedules because of increased demand.

Collins & Aikman Corp., Philadelphia, Pa., recently closed bids for a new mill unit at Fifty-first and Viola Sts., and contemplates beginning superstructure at an early date. H. M. Wilson Co., 20 South Fifteenth St., is consulting engineer.

Dodge Yarn Mill, Bridgeton, R. I., suffered a loss by fire on Dec. 6 estimated at $10,000.

Halliwell Worsted Mfg. Co., Pawtucket, R. I., has been liquidated under court order by Benj. F. Lister, receiver.

Centredale (R. I.) Worsted Mills after operating five months from June 15 in charge of a creditors committee has been returned to control of stockholders with no debts and net quick assets in excess of $300,000. Fritz Quittner was given management of the mill.

Chippewa Falls (Wis.) Woolen Mills Co., has leased the Horn & Blum Mfg. Co. plant at Eau Claire, Wis., and started branch plant. It is a temporary expedient to permit catching up with orders but if warranted branch will be permanent.

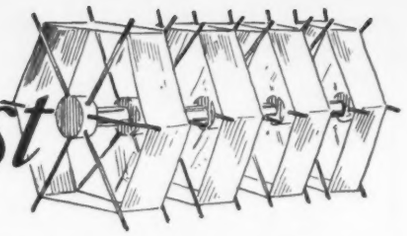
Copp Co., Port Elgin, N. B., has converted a flour mill at Port Elgin into a woolen plant. H. A. Copp is managing director of the company.

Circle-Bar Knitting Co., Ltd., with mills at Kincardine and Owen Sound, Ont., Canada has another large unit for spinning botany yarns at Kincardine, to be known as Botany Dry Spinners. A modern three-story fireproof building with 30,000 square feet of floor space has been completed and 20 carloads of spinning machinery are now arriving from England. This is an entirely new industry, altogether apart from other Circle-Bar activities.

Mohawk Mills, Ltd., is the name of a new dry spinning mill which has acquired the old box factory building located at Hamilton, Ont., owned by the Libby-Owens Co. The mill which is backed by Hamilton interests will be managed by R. W. Matthewman.

TEXTILE WORLD'S

Silk Digest



THE frank interchange of opinion, between raw silk factors and silk manufacturers, on the serious problems involved in the outlook for that fiber, should be helpful. Paolino Gerli deserves credit for his initiative in bringing about such an interchange.

The menace of unwise political interference in Japan concerns consumers just as much as dealers—and a united stand in opposition to complete Government control in that country should be forthcoming.

Linked with this phase, is the necessity for promotional activity. The possibilities of such a campaign have been discussed for months; rapidly changing political conditions have of course impeded progress, but have not removed the necessity for action.

Believes Throwing Increased in November

In discussing the low silk consumption for November as reported by the Silk Association, Dean Hill, executive secretary of the Throwsters Research Institute, pointed to the fact that from preliminary figures compiled by the Institute it looks as if the consumption of silk had dropped more in warp yarns than filling yarns.

"This supports the market contention that the acetate yarns had cut into the consumption of raw silk," said Mr. Hill. "The acetate yarns are used for warps and very little for crepe filling, and are wanted very little in the twisted state in warp yarns. From present figures compiled it would not be surprising if the throwsters showed more throwing of silk for weaving yarns for the month of November than for October, while the consumption of raw silk dropped from 53,703 bales in October to 43,955 bales in November. The fact that some of the acetate warps are filled with silk crepe yarns helps to maintain the volume of silk throwing while at the same time the consumption of silk shows a drop."

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Fight Shorter Greige Goods Terms

The announcement of the Greyco Sales Corp., made last month that after Jan. 1 terms of greige goods would be "30 days net" instead of the current "60 days net" has met with determined opposition from a considerable number of converters. A meeting of those in opposition was held Dec. 6 under the auspices of the converters division of the Silk Association of America, but at time of going to press nothing definite had been announced.

The Greyco Sales Corp. handles the greige goods of the following concerns: Duplan Silk Co.; C. K. Eagle & Co.; Allentown Silk Mills; Stunzi Sons Silk Co.; Schwartzenbach Huber Co.; Katterman & Mitchell Sales Corp.; B. Edmund David, Inc.; Bloomsburg Silk Mills; Piedmont Silk Co.; Susquehanna Silk Mills; Wm. J. Schepp, Inc.; and Dundee Textile Corp.

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Silk Usage Needs Stimulation

Raw silk at the price which prevailed the first of this month is cheap, both from the standpoint of price comparison with other textile fibers and the intrinsic merit of the fiber itself. The only difficulty is that few realize this, perhaps the ultimate consumer least of all. In analyzing the situation from the purely statistical angle there are sound reasons why silk prices should be low; among which might be mentioned overproduction of silk and the depreciated value of the yen. The ultimate consumer, however, cares little for statistics. If silk fabrics and silk dresses are a bargain, the cause means nothing to the consumer.

The difficulty lies in the fact that, unless the consumer happens to price silks, it is presumed that the better silk fabrics are in the "luxury" range and, therefore, few customers with limited means even consider the purchase of the better grade silk fabrics or dresses. The silk industry itself has been so cognizant of the causes for the present raw silk prices that it has failed to realize that customers who have casually priced silks have been astounded at the values offered—and this despite the fact that the customer expects low prices these days. It would seem that the silk industry has an opportunity to ignore the causes of present price levels in silk and to dramatize "value" in terms that the ultimate consumer will understand.

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Silk Consumption 53,703 Bales in October

Silk deliveries to American mills in November, as reported by Silk Association, were 43,955 bales, a decrease of 13% from same month last year. Imports were 47,422 bales and stocks at end of month 57,932 bales.

Deliveries of silk to American mills during October exceeded trade estimates. According to the Silk Association of America, deliveries for the month were 53,703 bales, against trade estimates in the neighborhood of 50,000 bales. Comparative figures are 59,694 bales in September and 56,668 bales in October, 1931.

Imports for October amounted to 58,775 bales, compared with 56,859 bales in September and 70,490 bales in October, 1931. Stocks at the end of the month were 54,465 bales compared with 49,921 bales a year ago.

•

Ask Rules Governing Rayon Throwing

The increased importance of rayon in the throwing industry is reflected in the action taken by the board of governors of the Throwsters Research Instiute, at a special meeting held Nov. 15, when a committee was appointed to assemble information on rayon throwing and to present suggestions to the Silk Association of America to the end that definite rules be set up governing the throwing of rayon. The present Commission Throwing Rules of the Silk Association make no mention of rayon.

In explaining the action, Dean Hill, executive secretary of the Throwsters Research Institute, said that rayon had become a large part of commission throwing and bids fairs to be in even greater demand and that, therefore, in fairness to weavers, throwsters and rayon manufacturers, action should be taken and definite rules and regulations concerning rayon be made part of the Commission Throwing Rules of the Silk Association. He also pointed out that rules governing the sale of thrown rayon yarns should be made a part of the Thrown Silk Rules governing the sale of thrown silk yarns.

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Design Protection Gains "Teeth"

One of the most significant steps to prevent design piracy in the silk print field was taken Nov. 10 when all printers in the metropolitan New York district agreed not to print any design that

was not registered with the Design Registration Bureau or patented with the U. S. Patent Office. The fight against design piracy, prevalent in most textile fields but particularly evident in silk prints, has been active of late and, as outlined last month, seems to be really accomplishing something after many years of denunciation but little effective action.

The agreement signed by the printers is as follows:

"That on and after Nov. 10, 1932, we will positively not print any design unless it is registered with the Textile Design Registration Bureau or patented with the U. S. Patent Office, and,

"Furthermore, we urge the full cooperation of converters and manufacturers to the end that initiative and originality of designs may be preserved."

The following concerns signed the document: Apex-Oriental Corp.; Associated Dyeing & Printing Co., Inc.; F. J. Beltramo, Inc.; Caledonia Print Works; Cretona Print Works, Inc.; Disco Dyeing & Printing Corp.; Fabrics Printers Corp.; Finco Dye & Print Works, Inc.; International Dye & Print Works; Kapo Dyeing & Print Works, Inc.; La Salle Printing & Dyeing Co.; Milton Piece Dye Works; National Silk Dyeing Co.; Strengs Dye Works, Inc.; Superior Dye & Print Works, Inc.; Sunbury Converting Works, Inc.; Textile Dyeing & Printing Co. of America, Inc.; United Piece Dye Works; United Textile Print Works; Waldrich Co.; William Wilheim Co., Inc.

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Employment Shows Gain In Silk Industry

Employment in the silk industry during the month of October was 2% greater than during September and 2.1% greater than during October, 1931, according to reports received from the Silk Association of America. Employment during the month of November will probably show a decrease due to seasonal factors. There is a lag between raw silk deliveries and the activity of the industry, naturally more marked in weaving than in throwing, and the fact that deliveries during October were somewhat less than 10% below September would indicate lessened machinery activity during November.

Keeping in mind the fact that October deliveries of raw silk were approximately 10% below both September and August, a breakdown of general silk industry figures into groups will show that the drop was just beginning to show up in throwing and was not in evidence in weaving during the month. Thus, spinning activity showed a decrease of 0.2%, while broad loom activity increased 1% and narrow loom activity increased 7.3%.

Yardage sales of broad silks were 12.2% higher in October than for the same month in 1931, but 28% below September, the seasonal decline being about as expected. Stocks in the hands of manufacturers at the end of the month increased 3.4% as compared with September, but were 22.2% less than last year.

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Schwartzenbach Huber Moves Offices

Schwarzenbach Huber Co. has completed the concentration of its New York activities at 498 Fourth Ave. by the recent removal of the executive offices from 470 Fourth Ave. The retail department is located on the ground floor, the cutting-up trade on the second floor and executive offices on the third. It is planned to move the testing laboratory in from Union City, N. J., on Feb. 1.

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Reorganization Plan

The fact that the recent report of the equity receivers for the Susquehanna Silk Mills shows that the concern has been operating at a profit since the receivers were appointed has led to talk that a reorganization plan will be prepared and presented to stockholders and creditors. Federal Judge Goddard granted permission to continue operation until Feb. 28, 1933.

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New Board Members For Cheney Bros.

The reorganization plan for Cheney Bros., South Manchester, Conn., described last month, has been made effective and practically all bonds and stock have been deposited for exchange. John F. Maguire and Boylston A. Tompkins have been added to the board of directors. Mr. Maguire is president and a director of the Textile Banking Co. of New York and is also a director of the Roanoke Mills Co. and the Rosemary Mfg. Co. of Roanoke Rapids, N. C. Mr. Tompkins is vice-president and a director of the Bankers Trust Co. of New York.

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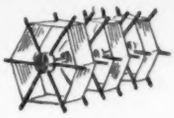
Silk Price Tables

The following prices of key items reflect the downward trend in silk quotations:

	Dec. 1	Nov. 1	Dec. 1 1931	Dec. 1 1930
Crack XX 13/15 white 78%.....	$1.48	$1.63	$2.35	$2.50
Tram, 5 thd Japan 85%..	2.25	2.35	3.40	3.95
Crepe 3-4 thd 13/16 Bob..	2.10	1.85	2.65	2.85
60s-2, spun silk.....	2.85	2.85	3.45	3.65



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Silk Mill News

SIDNEY BLUMENTHAL & Co., INC., Shelton, Conn., reports a net loss for the third quarter of $158,380, after a depreciation charge of $91,939. The third quarter one year ago showed a net profit of $242,596 with a depreciation charge of $92,226.

HARRY WHITTAKER, Northboro, Mass., and JAMES MCWILLIAMS, Oxford, Mass., have leased the Whittaker Mills at Northboro and will install machinery for combing silk.

ONONDAGA TEXTILE CORP. has been chartered in Baldwinsville, N. Y., with $50,000 capital, to operate a silk manufacturing business in that town. D. C. O'Bries, local attorney, represents it.

RIEBACH & MANDELL CO., INC., New York, N. Y., has engaged C. L. Hutchinson, Mobile, Ala., architect, to prepare plans for proposed new silk yarn mill, one-story, brick and concrete, at Atmore, Ala., where site was recently acquired. It is estimated to cost close to $70,000, with machinery.

CREOLE SILK CORP., Paterson, N. J., has been incorporated with capital of 1,250 shares, no par value, to operate a local broadsilk mill. It is represented by Herman Shapiro, 126 Market St.

HARRIS BROS. SILK CO., Paterson, N. J., is considering a new one- and two-story addition to mill on Union Ave., and expects to begin erection early next year. The unit will cost over $40,000, with equipment. Lee & Hewitt, Paterson, are architects.

UTILITY SILK CORP., Paterson, N. J., has been organized with capital of $125,000, to operate a local broadsilk mill. Harold B. Markowitz is one of the principal incorporators. The company is represented by Herman Shapiro, 126 Market St., Paterson, attorney.

GENERAL TEXTILE MILLS, INC., plans to start up two throwing plants at Lonacoming, Md., and Fredericksburg, Va., as part of the reorganization of General Silk Corp.

GALETON (PA.) SILK MILLS, INC., have been formed by H. E. Bishop and Charles Jenkins and have purchased the Galeton throwing plant from Jno. Dunlop's Sons, Inc. Both men were formerly with the latter firm.

BRUPBACHER SILK MILLS, LTD., Valleyfield, Que., has been declared bankrupt. Total claims at a recent meeting of the creditors totaled $671,890.23.

TEXTILE WORLD'S

Rayon Digest

IF budgeted production is feasible in any branch of textile manufacture, it certainly is in synthetic fibers. The events of the last year clearly demonstrate the need for it.

The industry received, and deserved, commendation for its sharp curtailment program in the early summer. However, when demand suddenly improved, it was found that the action taken had been too drastic, and producers were hard put to fill orders. One executive went so far as to state publicly in October that the curtailment "now appears to have been ill-advised."

We do not believe it was—considering the serious predicament which the industry faced. What *was* ill-advised was the drifting policy which made such a predicament possible.

The only answer—and it is entirely practicable—is an attempt to budget production more uniformly over the year. Budgets can be revised, of course, from time to time, but the net result will be fewer crises of alternating over-abundance and scarcity.

Delustered Print Effects On Acetate Gain Popularity

The report that the Calico Printers Association of Manchester, England, has developed a process for printing delustered effects on acetate fabrics serves to accentuate the possibilities of this type of finish. Celanese Corp. of America has had considerable success, particularly during the last six months, with "Frost Saconne" a Celanese satin with dull and high luster effects. The printing process itself was developed some years ago by Celanese Corp. and was described in TEXTILE WORLD, Feb. 5, 1927.

The English finish, called "pastulle," is described as a dull luster print on a shiny acetate satin; the dull print being either in pastel shades or merely white on white. The description of the original process of Celanese in this country, referred to above, outlined a method by which the fabric was first entirely delustered and then printed with re-lustering agents; color being added to the chemical printing paste if desired.

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November Rayon Production Near 100%

November rayon production continued essentially at the 100% rate reached in September, according to the *Textile Organon,* published by the Tubize Chatillon Corp. "November witnessed a continuation of the high rate of rayon shipments which began in August," says the paper. "There was evidence toward the end of the month, however, that December purchases of rayon will decline somewhat, as is seasonally normal, principally to allow customers' year-end inventories to be as small as possible."

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Rayon Shower Curtains Featured

New types of water repellent rayon shower curtains were on display at the National Hotel Exposition, held at Grand Central Palace, New York, in mid-November. Among the striking designs was a cotton-back rayon fabric with a Victorian print in black on a white background, exhibited by the Para Mfg. Co. of Newark, N. J. Despite the fact that this concern is affiliated with a rubber company, only one of the curtains shown had a rubberized back; the balance being treated with water repelling chemicals. The Sanitary-Dash Corp., dealers in plumber's supplies, also exhibited rayon and silk water repellant shower curtains in jacquards and prints.

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Du Pont Discontinues Acele Branch Office

In order to concentrate activities at the main office in the Empire State Bldg., Du Pont Rayon Co. has discontinued the branch office of the Acele department formerly at 40 Worth St., New York.

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Britain Preparing For Textile Exhibit

British weavers are busy preparing their spring lines which will be released at the British Textiles Exhibition, to be held in conjunction with the British Industries Fair, London, Feb. 20 to Mar. 3. The most popular type of rayon fabric on view will be the ripple crepe, or elephant skin, which was first introduced on the Continent but which English manufacturers believe they can improve upon along the lines of more permanent finish and resistance to shrinkage. Some firms are working on printed crepes.

The print designs in preparation show three trends. First is the vogue for stripes, particularly wavy stripes of varying thickness. The second feature is the use of chevrons, diagonal effects and large block checks on sheer cottons. The third print trend is in the direction of using both floral and geometric designs together.

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Furness Corp. Makes 150 Denier

The Furness Corp., Gloucester City, N. J., is now producing 150 denier cuprammonium yarn and has discontinued the manufacture of 50 denier. Production of 100 denier will be continued. The company uses a continuous process of spinning, purifying and winding, description of which was given in TEXTILE WORLD, Nov. 14, 1931.

Percentage Differentials Between Silk and Rayon Prices

	Rayon			Raw Silk	Differential Silk to Rayon, Percentage		
	150 Den.	100 Den.	75 Den.	Crack XX	150 Den.	100 Den.	75 Den.
1929	1.25	2.14	2.47	5.06	+304.8	+136.4	+104.8
1930	1.06	1.61	2.04	3.57	236.8	121.7	75.0
1931	.75	1.20	1.62	2.50	233.3	108.3	54.3
Nov. 13	.75	1.10	1.36	2.33	210.7	111.8	71.3
1932							
May 27	.65	.90	1.11	1.19	83.1	32.3	7.2
June 20	.55	.78	.93	1.25	127.3	60.3	34.4
Aug. 22	.60	.85	1.01	1.54	156.7	81.2	52.5
Nov. 11	.60	.85	1.01	1.68	180.0	97.6	66.3

All differentials are positive. This table represents a portion of the analysis of differentials between the average of viscose and acetate prices and raw silk, which was compiled by the International Statistical Bureau, Inc. The average rayon price is weighted to allow for the difference in viscose and acetate production.

Further Details of New British Celanese Products

Additional data on the new products of British Celanese, Ltd., are contained in the statement which Dr. Henri Dreyfus, chairman of the board, read at the annual meeting of stockholders, held in England Oct. 26. Sections of Dr. Dreyfus' statement which are of particular interest follow:

As a result of our intensive research work, which has been brought to a degree of practical and economical perfection, we are now entering into the artificial wool and schappe business, and this is expected to lead up to large sales in the future. We expect we shall be able to deliver substantial quantities during the present financial year, as we are actually installing machinery for this purpose. As this section extends we shall be in a position to supply articles to the trade for all seasons of the year. The products made with artificial Celanese wool can replace those made with natural wool.

We shall, during the present financial year, introduce higher viscosity acetates, which have four to five times the viscosity of our present ones and will have advantages in regard to resistance to wearing and washing, etc.

You will be very interested to hear that a most important and progressive step has been made by us in creating new qualities of Celanese yarn, which are much stronger than natural silk. This is again the result of our intensive research work.

I now come to some new types of Celanese yarns which, while retaining all the high properties of Celanese, can be dyed, printed and otherwise treated in exactly the same way as viscose and/or cotton, and which have, at the same time, a strength superior to that of natural silk, and are therefore two or three times as strong as viscose.

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Synthetic Fur Fabrics Popular in Paris

The simulation of fur by woven pile fabrics is nothing new, but it must be admitted that many of the products in the past were distinctly of the "imitation" variety. The "rumble seat" material which started out as a fur imitation but gained popularity on its own merits, and some striking silk pile fabrics with fur effects exhibited over ten years ago and still produced in a limited way, were exceptions to the rule but, by and large, imitation furs have not been held in high esteem. It is therefore of interest to learn, through the Paris office of DuPont Style Service, that leading Parisian dressmakers have turned their attention to synthetic fur fabrics, particularly those constructed with rayon and acetate yarns.

The synthetic fur fabrics now being produced are said to be excellent imitations of the natural furs, as well as possessing beauty in their own right. Broadtail was the first fur to be effectively reproduced in mohair or cotton during the last season, states the Du Pont Style Service. It is still in vogue this year and is shown not only in black but also in brown and gray. The whole development has additional significance in that only recently have the leading dressmakers officially recognized rayon and acetate fabrics.

Astrakhan, made both of mohair and of rayon, the former for the heavier and the latter for the lighter weights, is one of the successes of the season, according to the Style Service.

Next to astrakhan in favor are the substitutes for broadtail, caracul, galyak, colt and antelope. The various substitutes for ermine have a special place in the couture, since their use is not only confined to the above-mentioned purposes but also lends itself to the trimming of afternoon and evening dresses. All these are exclusively made of synthetic yarns, mostly acetate.

These fur substitutes find a further application in handbags, either set on a frame or cut in round shape, exactly like a muff. They also are used for glove trimmings, as well as for mules and boudoir slippers. Mules made entirely of stamped rayon velvet with a fur effect are considered extremely chic this winter.

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October Rayon Imports

Rayon yarn imports into the United States during the month of October were 2,181 lb., valued at $1,426. Cut or staple fiber, on the other hand, amounted to 514,423 lb., valued at $144,186, while 26,107 lb. of waste, valued at $3,326, were also imported. Out of a total of 568 lb. of spun yarn and thread, France supplied 494 lb. with value of $690, while the only import of artificial horsehair, 256 lb., came from the United Kingdom and was valued at $1 per lb., according to the Department of Commerce.

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Rayon Situation Held Cheerful

After a slight let-up toward the end of November, rayon shipments again picked up the first week in December despite the fact that a slowing up had been anticipated. It is believed, however, that from now on to the end of the year shipments will drop radically due to the desire of customers to have low inventories. The amount of business being booked for January is regarded as normal. It is not expected that business will be on the same basis it was in September and October, but volume should be satisfactory. It is probable that producers will continue to run their plants full time for a while, regardless of orders, as a means of building up adequate stocks again.

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Rayon Price Comparisons

The following are prices of pivotal rayon yarn numbers. Current prices are given with comparisons covering a month ago, a year ago and two years ago:

Viscose Process	Dec. 1	Nov. 1	Dec. 1 1931	Dec. 1 1930
75 denier (18-30 fils)..	$0.90	$0.90	$1.20	$1.56
100 denier (40 fils).....	0.75	0.75	1.00	1.30
150 denier (40 fils).....	0.60	0.60	0.75	1.00
Acetate Process				
150 denier.....	1.00	1.00	1.00	1.85
Cupra Process				
150 denier (112 fils)....	....	....	.90	1.25
Nitro Process				
150 denier.....	0.65	0.65	0.75	0.95

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Rayon Mill News

Edgar Weaving Co., New Bedford, Mass., recently organized with 500 shares of stock, no par value, has leased about 50,000 sq.ft. of floor space in No. 1 mill of the Nonquitt Mills, and will occupy at once for new rayon fabric mill. Looms and equipment will be installed to give employment to about 125 persons. Thomas T. Lucas is treasurer and Karl Robbins, of Colonial Mills, New York, is president.

New Bedford (Mass.) Rayon Co. is having a new Hungerford filter and Inversand water softening equipment installed by Hungerford & Terry.

E. M. Holt Plaid Mills, Burlington, N. C., operating on rayon goods, have installed 104 additional Crompton & Knowles looms and 6,200 new spindles of Fletcher throwing equipment.

Warlick Mfg. Co., Newton, N. C., rayon goods, has been purchased by a group of New York manufacturers and will begin operations shortly. A new company has been incorporated as the Mid-State Cloth Mills, with John Cilley, of Newton, president. Mr. Cilley was receiver for the company after it went into voluntary receivership some months ago. On the board are Karl Robbins and John H. Robbins of Colonial Mills, New York.

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TEXTILE WORLD'S

Knit Goods Digest

ALTHOUGH the price picture in hosiery during the last month has not been all that the most optimistic could expect, it was better than it has been in past seasons, under practically similar circumstances.

True, the reduction in 4-thread, 42-gauge full-fashioned from $4.50 to $4.25, or lower, failed to produce proportionately increased business—and must be termed unwarranted, just as most price-cuts are today. On the other hand, the comparative firmness of 7-thread was at least a negative cause for rejoicing. In other parts of the market, too, there seemed to be less panic just because demand fell off.

We cannot, with certainty, ascribe a reason for this, but it is at least possible that the warning sounded so clearly at the meeting of the National Association of Hosiery & Underwear Manufacturers in October may have had some effect. If so, our favorable impressions of that conference are intensified.

Incidentally, the advice still holds good: "On the way down the toboggan, sit tight on the price structure—and demand will come back."

Plans Go Forward For Knitwear Industrial Exposition

Considerable interest and comment centers on the first Knitwear Industrial Exposition which, as announced last month, will be held at Grand Central Palace the week of Feb. 13, concurrently with the annual convention of the National Knitted Outerwear Association. February is the month when the majority of outerwear buyers visit the New York market and it is believed that the exposition will serve as a focal point for the industry. Among the concerns which have already reserved space for exhibition purposes are prominent yarn and knitting machine manufacturers.

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Children's Hose Types Analyzed and Grouped

Price comparisons on children's hose have been almost impossible in the past owing to the great diversity of construction, materials and methods of selling. As a consequence there has been a considerable amount of price jockeying based on unsound premises. With a view to correcting the situation, a committee of six mill men, under the auspices of the National Association of Hosiery and Underwear Manufacturers, has been engaged in a study, the purpose of which is to analyze and segregate the various types of construction and also to look into marketing procedure. The first meeting of the group was held Dec. 6 and a general industry conference to examine the findings will be called later.

Members of the classification committee are: J. Lee Bausher, Infants Socks, Inc., Reading, Pa.; C. W. Komisky, Spalding Knitting Mills, Griffin, Ga.; Robert Davis, W. B. Davis Co., Fort Payne, Ala.; P. T. Cuthbert, J. H. Blaetz, Philadelphia; Leon S. Herbert, Herbert Hosiery Mills, Norristown, Pa.; and F. L. Landenberger, J. W. Landenberger & Co., Philadelphia.

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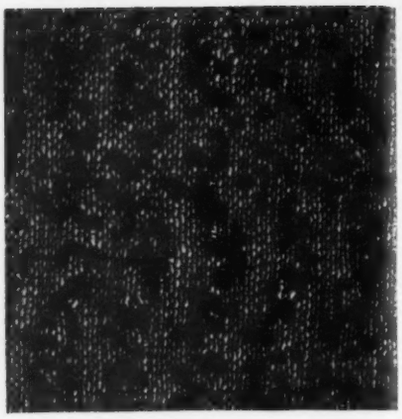
Notes on Chicago Outerwear Showing

The group showing of opening lines by the Knitted Outerwear Selling Agents Association, which took place in Chicago in mid-November, was almost universally regarded as a success. As might be expected, there were some animated skirmishes between buyers and sellers on the question of price, but it is encouraging to note that such engagements were of relatively minor importance and the prices, in the main, were firmly held.

Greater interest was noted in sweaters than in bathing suits. The fact that there were conflicting opinions on whether or not sweater prices represented a decrease from the opening fall prices, and from a year ago, is evidence that there was no pronounced trend in prices. The basque knitted shirt for men was one of the featured articles.



Knit fabric made with novelty yarn which has proved a good seller

In bathing suits the tendency was to increase quality rather than decrease price as compared with a year ago. Demand seemed to center on staples and highly styled swimsuits with little in between. In style goods novelty fabrics appeared to be of greater importance than extreme models. Zephyr yarns were favored and the suits which include Lastex are expected to be featured in merchandising.

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New Fine-Gage Hosiery Produced

What is described as the finest full-fashioned hosiery ever produced in this country has been placed on the market in several leading department stores by the Oakbrook Hosiery Mills, Inc., Reading, Pa. The stocking is a two-thread, 60 gage and, although at present dip-dyed, will be of the ingrain type after Jan. 1. There is said to be only one set of German machines capable of making such hosiery located in this country. Retail price was $1.95 per pair.

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Cannon to Make Cotton Bathing Suit

The trade is frankly interested in the entrance of Cannon Mills into the bathing suit field with a cotton garment. According to rumor, experimental work has been going on for some time and a cotton bathing suit described as being form-fitting, wet or dry, and color fast is expected to be shown within a short time.

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Wisconsin Modifies Night Work Stand

Following agitation among manufacturers, particularly knitting mills, the Wisconsin Industrial Commission has expressed its willingness to allow, beginning Jan. 1, women to be employed up to 10 p.m., with certain restrictions, as against the previous regulation that such work must terminate at 6 p.m. The action was taken on the specific petition

of the mayors of Waupun, Ripon and Fond du Lac, although the larger knitting centers will be similarly affected, despite the fact that hosiery manufacturers were denied permission to operate at night some months ago.

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Cut-and-Sewn Non-Run Makes Appearance

A cut-and-sewn non-run hose has been placed on sale in several of the larger department stores of the East at a retail price of $1 per pair, as compared with $1.35 for the Berkshire or Gotham non-runs. The stocking is warp knit, the foot being made on the usual full-fashioned footer and the instep then cut out to allow the looping in of the cut warp-knit leg.

Gotham has been featuring the non-run in consumer advertising, but sales have not been sensational. As far as the whole non-run market is concerned, observers believe that many have expected too rapid a growth of this type of hose and that in reality expansion of the market will be a matter of months and years and not days and weeks. Consumers have complained that the heels of non-run hose wore out so rapidly that there was not much use in having the non-run feature. Naturally, the manufacturers have taken steps to remedy the difficulty, but all such affairs take time. Another difficulty is that the construction of non-run is such that rings due to uneven silk show up markedly.

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Hosiery Prices Firm

Outside of the readjustment which followed the drop in price of 4-thread, 42-gage, full-fashioned hosiery last month, the price situation has been encouragingly stable. While no one believes that present levels are attractive from the profit standpoint, there is almost universal agreement that prices will go no lower.

One maker has gone so far as to guarantee his prices, while certain jobbers have accumulated fairly large stocks in the belief that there will be no inventory loss and that a well assorted stock will assist in getting business.

The demand for Christmas trade was helped by the cold spell which swept the East the Thanksgiving weekend. Some factors who have been following the market closely believe that many are underestimating this year's holiday trade.

Canadian Association Elects

H. Barrett was re-elected president of Canadian Woolen & Knit Goods Assn. at meeting in Toronto, Nov. 16. Douglas Wood, was elected vice-president, and Major Douglas Hallam, secretary-treasurer. J. G. Dodds of Paton Mfg. Co., and A. E. Craig, of Barrymore Cloth Co., were appointed to the executive committee.

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Knitting Mill News

MORGAN MILLS, Rome, Ga., lately formed by R. A. Morgan, Rome, and associates, have taken over local plant of the CHESTER KNITTING MILLS, and will put it again into operation on hosiery manufacture. At a later date it is proposed to acquire property at North Rome and remove the plant to that place, expanding capacity.

BEAR BRAND HOSIERY CO., Kankakee, Ill., has superstructure under way for a new six-story mill addition, for which general contract was recently let to the Immel Construction Co., 19 West Division St., Fond du Lac, Wis.

STUART W. BURT HOSIERY MILLS has begun operations in the old Fairhaven Mills property at New Bedford, Mass.

MIDLAND PARK (N. J.) KNITTING MILLS have ben bought for $36,200 by James Brown for a syndicate.

LORAINE SILK HOSIERY MILLS, Weehawken, N. J., recently organized, have leased space in building at 556-62 Gregory Ave., and will occupy for a new mill.

WAVERLY HOSIERY MILLS, Weehawken, N. J., have been organized with capital of 100 shares of stock, no par value, by Martin Bernkoff, 257 Eighth Ave., Paterson, N. J., and Charles E. Goldberg, Brooklyn, N. Y., to operate a local mill.

ONONDAGA TEXTILE CORP., Baldwinsville, N. Y., has been organized by Lewis M. Tappan, Baldwinsville, and associates, with capital of $50,000 and 2,500 shares of stock, no par value, to operate a knitting mill.

PRINCETON RAYON CORP., Watertown, N. Y., has a court order compelling the sale of certain machinery and equipment pledged to secure a loan from Industrial Rayon Corp. Sale is set for Dec. 20.

MCPAR HOSIERY MILL, Marion, N. C., has added 12 new machines to increase production to 4,000 doz. prs. of hose a week and employees to 110.

MORGENTOWN (N. C.) FULL-FASHIONED HOSIERY CO., has purchased five single-unit 45-gage machines. It is hoped to start production on them in February.

RENFRO HOSIERY MILLS, Mount Airy, N. C., is constructing a two-story storage warehouse adjoining the manufacturing department. The structure will be brick, 35x85 ft., planned to allow the addition of other floors.

MOUNT PLEASANT (N. C.) HOSIERY MILLS, INC., recently organized by Paul Foil, Mount Pleasant, and associates, have taken over a building owned by Mr. Foil, and will occupy for a new mill. Initial production will be on a basis of about 340 doz. prs. of hose per day on equipment of 54 machines.

VARINA (N. C.) KNITTING CO., which suffered a fire on July 30 which destroyed its plant, is now rebuilding and expects to be ready to start operations Jan. 1. It is putting up a modern fireproof mill and will equip with spiral H. H. machines and seven-course, sinker-reverse-plating H. H. machines. A finishing plant will also be installed.

JANTZEN KNITTING MILLS, Portland, Ore., showed a net loss before dividends of $118,192 for the fiscal year ended Aug. 31, 1932, compared with a net profit of $180,916 in preceding years. Consolidated net sales showed a decline of 43% in money value between the two years.

INTERSTATE HOSIERY CO., Lansdale, Pa., has awarded general contract to William F. Lotz, Oxford Pike and Frankford Ave., Philadelphia, Pa., for new one-story boiler plant at mill. Estimated cost over $20,000,

KRAEMER HOSIERY CO., Nazareth, Pa., has made an offer to the receivers of the Allentown (Pa.) Silk Hosiery Co. for purchase of machinery which has been approved by the court. After lease arrangements are completed the mill will probably be started up. Kraemer also bought machinery lately from Lehigh Silk Hosiery Mills in liquidation.

JOHN BLOOD CO., Philadelphia, has purchased an Inversand water softener.

FEDERAL KNITTING CO., Philadelphia, has ordered twelve 42-gage full-fashioned hosiery machines of German make.

HANCOCK KNITTING MILLS, Philadelphia, have been reorganized into two divisions, the Hollywood and Empire Divisions, each carrying separate styles and sales policies.

PENNSHIRE HOSIERY CO., Reading, Pa., has purchased the idle Shillington Hosiery Mills from the estate of Martin Fritz, founder.

ROSEKNIT HOSIERY CO., Sumter, S. C., had an involuntary bankruptcy petition filed against it in the United States district court, Charleston, S. C., on Nov. 19

NEW ENGLAND HOSIERY CO., reported in a previous issue as sold to Robt. R. Cordin should properly have been described as located at Providence, R. I. The item incorrectly connected it with Winsted, Conn., where mills with somewhat similar names are located. The Winsted firms are in no way associated with the proposition.

MASON KNITTING CO., Acton, Ont., Canada, is said to be planning early construction of a new addition to mill, one-story, about 48x100 ft., reported to cost over $25,000, with equipment.

TEXTILE WORLD'S

Processing Digest

ADVANCES in prices, made last month, of 3 to 4c. per yd. on dyed goods and 5 to 7c. on printed materials signify that the silk dyers and printers in the Paterson area have at last realized the futility of doing business at a loss, and are resolved to make a profit or at least "break even." Converters, on their part, admit that the increases are necessary and, it is understood, stand ready to accept them provided the finishers will give assurance that the new rates will be maintained.

The moment for higher prices, which was begun by some of the smaller companies and joined shortly after its inception by the larger firms, is an important step toward the rehabilitation of the industry. It is to be hoped that there will be no renewal of price-cutting, granting of inside concessions and rebates, or other unbridled competitive practices which in the past have played havoc with the dyeing and printing industry.

A.A.T.C.C. Notes

At the November meeting of the New York Section, of the American Association of Textile Chemists and Colorists, W. J. R. Hauser of the Revertex Corp., New York, spoke on "New Developments in the Rubberizing of Fabrics." In his discussion of the use of latex in the textile industry, Mr. Hauser emphasized the importance of recent investigations which have shown that addition of certain types of penetrating agents to the latex results in more complete penetration of yarns and fabrics by the rubber.

Speakers at the fall meeting of the Southeastern section were Robert Cowan, of Quaker City Chemical Co., who talked on "Dyeing and Finishing Troubles Caused by Mildew or Mould Fungi," and Carl Epps, of Tubize Chatillon Corp., who spoke on "Rayon Knitting, Dyeing, and Finishing."

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New Sulphonated Compounds

A series of new sulphonated compounds, termed Glyceryl Sulphates and Aliphatic Ester Sulphate, have been developed by Onyx Oil & Chemical Co., Jersey City, N. J. The manufacturer lays stress on the fact that these products are new compounds, made by a new, unusual method inaugurated by the Onyx laboratories, and points out that outstanding among the many features of this series is the fact that the compounds hold a uniform average of SO_3 content that practically reaches the point of complete possible sulphonation. The compounds are made from various oil bases for throwing, dyeing, finishing, and printing on all fabrics. Advantages claimed for these new products are exceptional stability, concentration, penetration, and solubility. In addition, they resist boiling in organic salts and acids, and are not affected by hard or calcareous waters. Typical benefits cited for these compounds are as follows: In dyeing, important savings in dyestuffs are effected; in boiling-off, fabrics are cleansed with speed and thoroughness; in finishing, a penetrated finish is obtained; in storage, no objectionable odor develops.

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Fireproofing Salts

Application of "Cellon" to textile fabrics, including lace, silk, rayon, muslin, canvas, draperies, clothing and cotton goods, is said to make them noninflammable. These fireproofing salts, developed by the American Fire Protection Co., Chicago, are normally delivered in dry powder form. It is stated that practically any textile material can be fully treated in from 5 to 20 min. Application may be made either by immersion in the solution, or by sponging, brushing, or spraying, according to the conditions and kind and purpose of the fabric.

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Chemical Research at N. C. State College

Accomplishment of constructive work, in addition to furnishing practical training to students, is the aim of the chemical engineering department, at North Carolina State College. Each year picked graduate students, and sometimes undergraduates, are assigned the task of finding a profitable use for some common waste product of farms or industries in the State.

A research problem carried out last year resulted in an inexpensive method for the utilization of peanut hulls in making cellulose products. This year a group of students are working on a study of scrub trees of the eastern part of the State with the view of determining their possible use in making paper.

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Color Council to Meet

The second annual meeting of the Inter-Society Color Council will be held at Columbia University College of Pharmacy, 113 West 68th St., New York, at 10:30 a.m., Dec. 28. All individuals interested in color are invited to attend this meeting.

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Finishing Activity

Figures released by the National Association of Finishers of Textile Fabrics show printing at 61% of normal capacity in October, white and dyed combined 56%, fast black 35% and logwood and sulphur black 23%. These are percentages of normal capacity covered by orders received, and therefore, are not comparable with data for previous months which were reported on the basis of goods processed, rather than orders received.

•

Sulphonated Fatty Alcohols

Under the trade-mark names of Gardinol WA Double Powder, Gardinol WA Powder, and Gardinol CA Powder, E. I. du Pont de Nemours & Co., Inc., is offering a line of sulphonated fatty alcohols which are said to possess exceptional scouring, cleansing, and wetting properties. These various types of Gardinol are essentially detergents and combine several valuable properties which have not, until recently, been available in this class of material. The calcium and magnesium salts of Gardinol are soluble and no precipitation occurs in hard water. In solution they are neutral and are active under both acid and alkaline conditions. They are not hydrolyzed by strong acids in usual dyeing concentrations. Their use is recommended for wool scouring, including raw wool, yarns, and piece goods; and for dyeing wool to promote cleanliness and uniformity. They are also adapted to the scouring and dyeing of rayon and cotton yarns and fabrics.

Other materials belonging to the same group of sulphonated fatty alcohols are being offered by the same company under the names of Brilliant Avirol L-142, Brilliant Avirol L-144, Brilliant Avirol L-168, and Brilliant Avirol K-10. These products possess the same prop-

erties of stability as the various types of Gardinol, but are better suited for use as finishing materials. It is stated that with these materials it is possible to obtain exceptionable finishes which are not subject to atmospheric oxidation or deterioration on storage.

•

New Dyestuffs

E. I. du Pont de Nemours & Co., Inc., announces the development of the following product:

Pontacyl Fast Brown CGS, a homogeneous acid dyestuff giving rich, reddish brown shades on wool and silk. It is used mainly as a self-color brown, but is expected to be of value for shading other acid colors possessing the same properties. It is fast to fulling for an acid color and exhibits excellent general fastness to all destructive agents except light; the light fastness, however, is sufficiently good for ordinary silk and wool requirements.

General Dyestuff Corp. announces the following new products:

Celliton Red Violet RR Powder, a new dyestuff for cellulose acetate. It is applied from a soap bath. Features of this product, besides its full reddish shade, are its very good dischargeability and fastness to neutral cross-dyeing.

Benzo Viscose Blue BF, a new member of the range of level-dyeing colors for rayon. This product has a much clearer redder shade and better tinctorial value than either Benzo Viscose Blue G or R.

Fastusol Red Violet RL, a direct dyestuff of exceptional fastness to light. This color is also recommended for dyeing cotton, rayon, and for dyeing cotton-rayon mixtures the same shade.

Inanthren Brilliant Orange GR Suprafix, a new homogeneous vat color of excellent printing properties. It gives a brilliant shade of superior fastness to light, boiling, washing, and chlorine.

Fast Light Red 4BA, a new acid red which produces a bluish red of very good fastness to light when dyed from a glauber salt and sulphuric acid bath. It is recommended, in combination with Alizarine Direct Blue A2G and Fast Light Yellow 2GX Conc., for the production of mode shades on dress goods, carpet yarn, etc.

Supramine Red 6BL, a new acid color which, when dyed from a glauber salt and sulphuric acid bath, produces a bright bluish red of very good fastness to light. It is recommended for producing of mode shades on dress goods, as a shading color for wool in union dyeing, and for printing of wool and silk; it discharges to a clear white with Rongalite.

•

To Stabilize Printing Prices

Announcement made early this month by H. Nelson Slater, president, Slater Co., Inc., Webster, Mass., that his organization will no longer process work for which it cannot obtain fair return on a normal basis of operations is generally commended in the trade as an important move towards placing the printing industry on a profitable basis. It is also aimed to check the decline in prices of printing cotton fabrics.

•

Processing Plant News

NIAGARA PRINT & DYE WORKS, INC., has placed in operation at 52 East 19th St., New York, a four-machine printing plant for silk, rayon, etc. The plant is under the supervision of John W. Wolstenholme, who was formerly the manager of the Sussex Works of Associated Dyeing & Printing Co., Inc., Newton, N. J.

CLINTON (Mass.) DYE WORKS has purchased a complete new Inversand Zeolite water softening plant for application to a new source of water.

FIDELITY PRINT WORKS, INC., Paterson, N. J., has been organized with capital of 1,000 shares of stock, no par value, to operate a local dye and finishing mill. B. H. Muzzy is one of the incorporators. The company is represented by Emanuel Shavick, 140 Market St., Paterson.

GAEDE SILK DYEING CO., Paterson, N. J., has purchased additional Inversand water softening equipment from Hungerford & Terry.

STREUG'S DYE WORKS, Paterson, N. J., will continue to be operated for another year under supervision of its creditors' committee with prospects for further improvement in its position. The interests of Messrs, Neslin and Jeandros in the company have been acquired by Emil Flory supervisor of the print department.

BOGER & CRAWFORD, mercerizers, Philadelphia, will soon install equipment for increasing production of mercerized yarn by more than 50%. A special warp mercerizing machine is being constructed by H. W. Butterworth & Sons Co. to augment the present output.

DELTA FINISHING CO., Philadelphia, has asked bids on general contract for a new boiler plant at mill on Lewis St., and will proceed with work at early date. H. M. Wilson Co., is consulting engineer.

ROCK HILL (S. C.) PRINTING & FINISHING CO., has awarded contract to Waldrop Heating & Plumbing Co. for installing sprinkler system in its new addition.

PIEDMONT PRINT WORKS and SOUTHERN BLEACHERY, INC., Taylors, S. C., have completed a new building of concrete and modern mill construction.

RAY-SUR DYEING CO., Chattanooga, Tenn., is installing new machinery which will increase the output of the plant more than three times its present capacity.

PROCESSING IN THIS ISSUE

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Glamorose—a Celanese-and-silk crepe printed by trichrome process producing innumerable shades with only three printing colors

Textile World Analyst

MANUFACTURING MARGINS MOVE DOWN HILL FAST

Textile Activity Well Maintained—Textile mill activity in November, on basis of raw material consumption, is estimated by TEXTILE WORLD at approximately 5% under October. This estimate is preliminary and subject to revision. This decline from October is about the same as that noted in a "normal" year. For the first 11 months of 1932 textile activity was 13% under the corresponding period of 1931, and 20% under the first 11 months of a "normal" year. In determining a "normal" year, month-by-month consumption figures for the period 1924-1931 were averaged.

▼ ▼ ▼

THE feeling of discouragement which was noted among textile men at the end of November was not based on imaginary troubles. The hard cold fact was that mills had continued to turn out a satisfactory volume of goods during the month but at a decreasing, rather than an increasing, chance for a profit. The most casual study of manufacturing margins will reveal that fact.

Carded cotton fabrics may be taken as a horrible example. TEXTILE WORLD's estimate of the manufacturing margin in that group for the last week of November was only a little bit better than the low which prevailed in July. The downward movement which started in October continued at a much accelerated rate last month. The Nov. 30 figure was 9.7c., compared with the high of 13.0c. in September and with 9.1c. in July. The sad story is told in detail in Table I.

Carded yarns were not so bad—but bad enough. The average margin in November was 11.3c., against 12.3c. in October. In the last week of November, the figure was 11.0c.—still well above the low of 9.6c. in July, but headed in that direction. Read Table II and weep.

Even combed yarns finally felt the strain. After holding bravely to a level of 27.7c. during most of the month, the manufacturing margin fell to 25.0c. in the last week. This compares with 27.1c. in October; 29.7c. in September; 24.8c. in August, and 2.14c. in July. Combed fabrics also slipped; the margin at the end of the month was 14.45c. against 16.8c. at the beginning.

We have searched vainly for an alibi for textile manufacturers. There was no sudden degeneration in the statistical picture which might have explained the panic; no important change in the outlook for raw material supply; no serious crisis in the position of stocks of goods and yarn in the mills or elsewhere. We are also confident that the results of the election, or the war-debt discussion, or any other national or international complication did not precipitate the decline in profit possibilities.

The only answer is that the industry ran into a slackening in the demand for its products—a slackening, incidentally, that was inevitable in view of the volume of business done in the preceding months, and also in view of normal seasonal trends. The abatement could have been predicted—was predicted, in fact, but the warning fell on deaf ears.

Estimating the present position as accurately as possible with the limited statistical information available, it can be stated that the situation can still be corrected. Production has not yet run wild—and most branches of the industry have learned how to hold it in check. Consequently, all that is needed is a tightening of the belt: a determination to restore manufacturing margins to a level at least on a par with those prevailing in September. They were none too satisfactory, it is true, but they loom large when compared with today's figures.

A little study of the margins as tabulated on this page is suggested. After that, the individual manufacturer does not need such a table on his desk. He knows only too well when he is taking an order at ruinous prices.

That is why, as we said before, all did not seem serene in textile circles at the end of November.

TABLE I. CARDED FABRIC MARGINS

Date	Margin in cents
July, 1931	15.3
October, 1931	13.3
January, 1932	12.1
June, 1932	9.5
July, 1932	9.1
August, 1932	11.1
September, 1932	13.0
October, 1932	12.6
November, 1932	10.7
Wk. end. Nov. 2.	11.6
Wk. end. Nov. 9.	11.1
Wk. end. Nov. 16.	10.8
Wk. end. Nov. 23.	10.5
Wk. end Nov. 30.	9.7

TABLE II. CARDED YARN MARGINS

Date	Margin in cents
July, 1931	12.6
October, 1931	12.7
January, 1932	10.9
June, 1932	9.9
July, 1932	9.6
August, 1932	9.7
September, 1932	12.8
October, 1932	12.3
November, 1932	11.3
Wk. end. Nov. 2.	11.6
Wk. end. Nov. 9.	11.5
Wk. end. Nov. 16.	11.1
Wk. end. Nov. 23.	11.2
Wk. end. Nov. 30.	11.0

Textile World's Index Numbers

Date	Cotton Index Numbers: Cotton Yarns	Gray	Colored	Wool Index Numbers: Wool	Tops	Yarns	Cloth	Raw Silk Index: Date	Raw Silk
July 31, 1914	100	100	100	100	100	100	100	July 31, 1914	100
1925	193	193	193	177	221	226	222	234	1924-25 season	140
1926	146	159	161	152	189	195	199	210	1925-26	172
1927	130	146	153	147	179	184	186	195	1926-27	141
1928	160	162	163	166	218	201	198	197	1927-28	126
1929	158	163	156	168	182	184	193	198	1928-29	126
1930	114	131	127	147	131	143	164	190	1929-30	104
1931	75	97	99	121	102	114	134	165	1930-31	62
1932										
Jan.	53	78	74	102	94	104	127	147	Jan., 1932	41
April	49	75	73	98	83	98	121	133	May, 1932	28
June	42	66	63	94	62	76	110	116	June, 1932	25
July	47	68	62	96	59	72	101	116	July, 1932	25
Aug.	60	75	76	94	66	75	99	116	Aug., 1932	36
Sept.	59	90	84	107	82	94	116	130	Sept., 1932	40
Oct.	52	83	78	107	82	97	115	130	Oct., 1932	37
Nov.	49	76	69	107	79	92	111	125	Nov., 1932	33

Give Spring fabrics stronger sales appeal with Quitex Spun Rayon . . . .

As you look for a way to freshen up your Spring fabrics, to give them a new style slant that will step up sales, keep in mind Quitex Spun Rayon.

Remember that Quitex is comparatively new. That it is unlike any other yarn in the effects it produces in the finished fabric. It gives to the fabric a dull sheen, a clinging and graceful drape—in short, a distinct advantage over competitive fabrics at the point of sale.

Since the first announcement of Quitex Spun Rayon, each season has seen more and more fabrics styled with this novel yarn. And right here an impressive fact comes to light. Once a designer uses Quitex, once the mill executives see the effect of Quitex on the appearance and sales of the fabric, both designer and executives never overlook a chance to work Quitex into their fabrics. Today, for example, more mill men are asking for Quitex samples than ever before.

Before you decide on the Spring fabrics you'll feature, look over some Quitex samples. Write or telephone for samples.

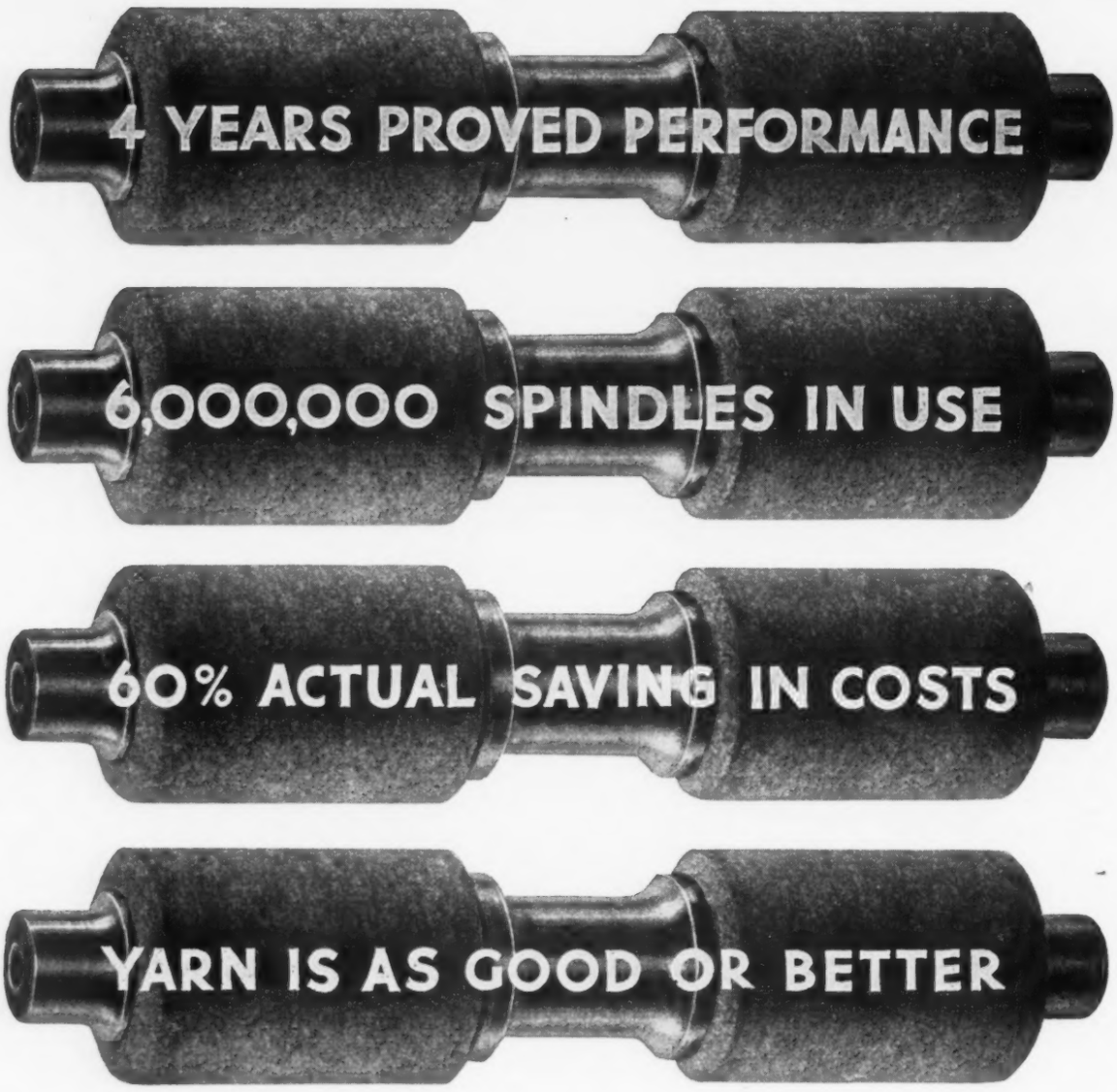
Quissett Mill
New Bedford, Mass.
Wm. M. Butler, Pres.
Edward H. Cook, Treas.
Thomas F. Glennon, Agent

QUISSETT MEANS QUALITY

Our quotation based on
Cost + a reasonable profit.

Quitex Spun Rayon
by the spinners of
Quissett Cotton Yarns

BUY ON PROOF... NOT CLAIMS



WHY EXPERIMENT with other rolls when Armstrong's Seamless Cork Cots have *proved* their case in mill after mill? Don't be misguided by *mere claims* when actual cost records of over 100 leading mills, (25% of the country's total spindlage) show savings of from 50% to 80% with Armstrong's Seamless Cork Cots.

Why are more than 6,000,000 spindles at present running on Armstrong's Cots? Why are other mills changing over as fast as replacements permit? These mills, spinning from 2s to 120s, have not only proved to themselves the tremendous cash *savings* possible with Armstrong's Cork Cots, but they have also found running conditions *greatly improved* . . . "eyebrows" practically eliminated . . . clearer waste decreased . . . fewer lap-ups and hard ends . . . evener yarn.

Can you afford to overlook these accepted facts in purchasing your roll coverings? Then all we ask is that you investigate Armstrong's—the PROVED cork cot.

Write for Free Book of Facts

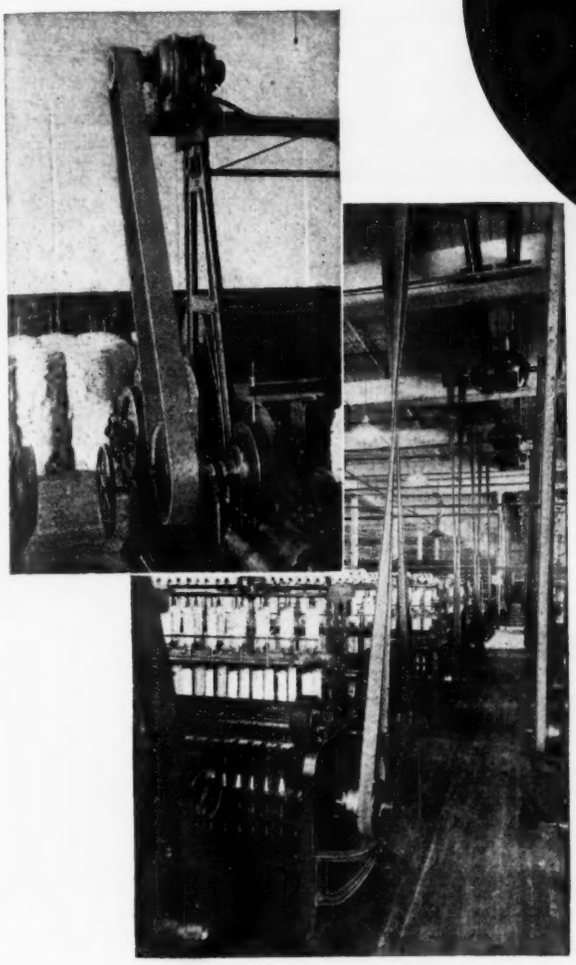
Send for your copy of "The Facts About Armstrong's Seamless Cork Cots" *today*. It gives actual cost studies made by the mills themselves. Learn the full details of the many advantages of Armstrong's Seamless Cork Cots. Address Armstrong Cork & Insulation Company, Cork Division, 924 Arch Street, Lancaster, Penna.

Armstrong's (A) *Product*

Armstrong's SEAMLESS *Cork Cots*

For Spinning and Card Room Rolls

There is No Substitute for Experience



All Goodyear products are constantly under development and test for further improvement. Each new advance is completely mill- or mine-proved when offered for industrial service.

SOMETHING much more valuable to you than even the best of rubber and the strongest of cotton cord is built into Goodyear Belts for textile drives.

It is the intimate knowledge which Goodyear has of textile mill requirements, gained from actual experience in equipping large fabric mills.

How to design and how to build belts that will be subject to an absolute minimum of stretch, that will resist fraying under shifting, that will not rip or split at the center — these are a part of Goodyear experience, built into Goodyear belting, and available to you at no premium cost.

For example, Goodyear COMPASS (Cord) Endless Belt is the most nearly stretchless belt made. It is truly endless, made of cords laid side by side, bound with Goodyear rubber, and enclosed in a fabric envelope that is double on the pulley side. The cord carries the tensions; the cover takes the wear. An exceptionally serviceable belt for individual motor drives in Vertical Openers, Pickers, Tappers and Twisters.

Other specially designed and constructed Goodyear Belts are recommended for long wear and low replacement costs on Cards, Frames, Slubbers, Spoolers, Looms, Slashers and Breakers.

Why not talk with the G.T.M.—Goodyear Technical Man — about belt equipment to assist your operations and save you money? He will call promptly at your suggestion. Write to Goodyear, Akron, Ohio, or Los Angeles, California, or your nearest Goodyear Mechanical Rubber Goods Distributor.

TEXTILE BELTING

THE GREATEST NAME IN RUBBER

GOODYEAR

A spun-rayon yarn unique in weaving qualities . . . .

TRADE MARK

TEXTILLA

TEXTILES—INCORPORATED

GASTONIA N.C.

The richness of the fabric in no way reveals the low cost of this yarn

Found in many of the season's most interesting fabrics. TEXTILLA is the result of years of research. Spun of exclusive fine denier long rayon staple. Even in texture, strength, dyeing qualities. Some descriptions in blends of rayon and wool . . . in crepe, filling, and warp twists for weaving. In counts 15s to 60s, single and ply.

TRADE MARK

TEXCELL

TEXTILES—INCORPORATED

GASTONIA N.C.

Spun of the choicest American grown or best Sakelaridis cotton, in sizes from 8s to 120s, natural or mercerized. We create yarns for your special requirement.

Quotations and samples forwarded promptly on request.

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GASTONIA NORTH CAROLINA

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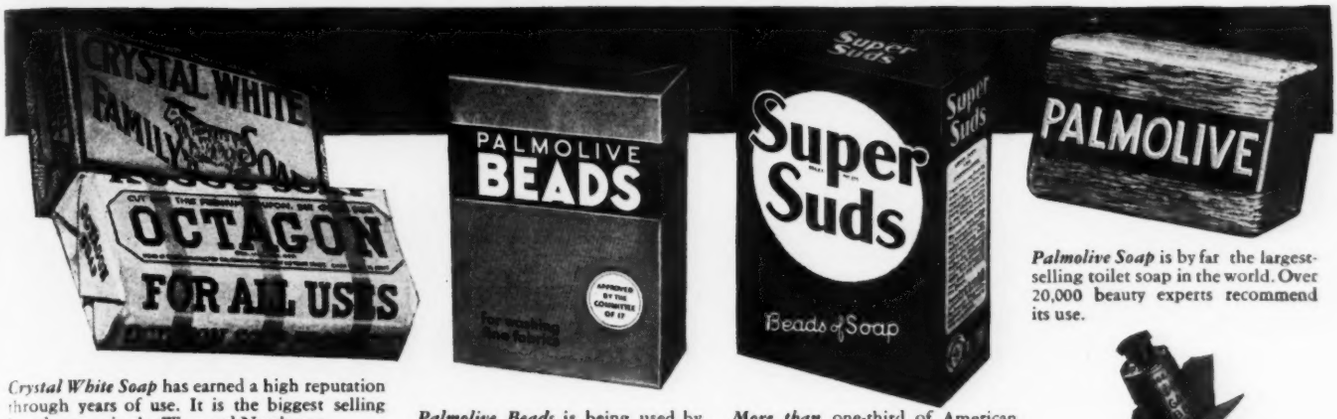
EXPORT DEPARTMENT: 245 FIFTH AVE., NEW YORK CITY



Crystal White Soap has earned a high reputation through years of use. It is the biggest selling laundry soap in the West and Northwest.

Octagon Laundry Soap is the largest selling laundry and household soap in the Southern States and one of the largest in the East.

Palmolive Beads is being used by millions for the safe washing of fine fabrics. Recommended by leading silk manufacturers.

More than one-third of American women now use Super Suds, new bead soap sensation for faster, easier dishwashing.

Palmolive Soap is by far the largest-selling toilet soap in the world. Over 20,000 beauty experts recommend its use.

OUTSTANDING QUALITY

has made these products famous

The same strict standards of quality govern the making of our famous textile soaps

THE maker of these world famous products offers you textile soaps that guarantee quality work at low cost. The same careful preparation, the identical strict standards of quality which are responsible for the recognized world leadership of Colgate-Palmolive-Peet products is maintained in every batch of soap we ship to your plant.

Our scientifically prepared olive oil soaps—for years favored by the textile industry—are the result of more than 125 years of soapmaking experience. Results in textile plants throughout the country have proved they do their work better and quicker . . . that they assure the quality of finished goods week in and week out.

Why not give these quality soaps an opportunity to prove their merit in your plant? Write today for prices and a trial run.

Texolive Kwiksolv
(*An Olive Oil Soap*)
Texolive Kwiksolv is an olive oil soap in spongy form. Its solubility and direct action will surprise you. (Contains 92% real soap.)

Arctic Olive Oil Soap
(*Bar, Bulk, Chip*)
This item is produced from 100% olive oil foots. Mild, neutral, rinses freely. Is especially valuable in processing silks, woolens, rayons and similar fabrics.

Texolive (*Bar, Bulk, Chip or Granules*)
Texolive is identical to Arctic Olive Oil Soap, except that it contains a small percentage of coconut oil to produce additional sudsing qualities.

Arctic Crystal Flakes
(*Or Granulated*)
Arctic Crystal Flakes is our finest high-grade, all-tallow soap, approximately 42° titre, 88% plus real soap content. It produces high tension, elastic suds.

1 *Colgate's Ribbon Dental Cream* is known and used everywhere. For 30 years it has been the world's largest selling toothpaste.

2 *Palmolive Shaving Cream* is the favorite of more men than any other kind, the largest selling shaving cream in the world.

3 *Colgate's Rapid Shave Cream* is second only to Palmolive Shaving Cream in sales and popularity the world over.

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- ☐ Samples for Laboratory Examination (Please name products)

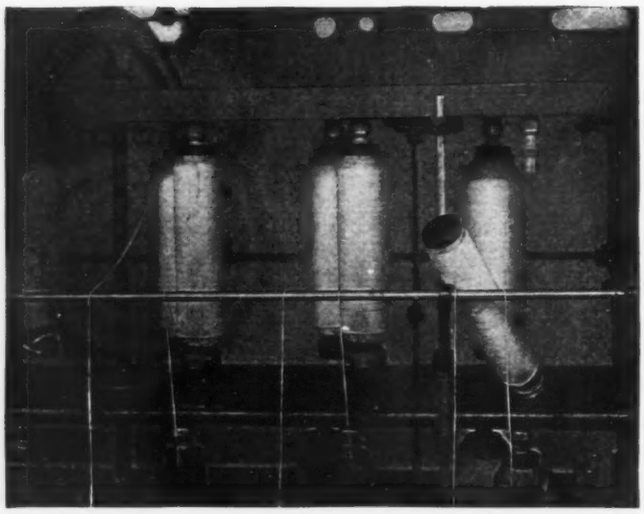
Name.....
(Please print name)

Company.....

Address.....

City..... *State*.....

Secure a smooth, effortless pull on the roving



Order one Eclipse Ball Bearing Bobbin Holder and compare its superior performance with that of wood skewers. If it fails to meet our claim — your money will be refunded.

Eclipse Ball Bearing Bobbin Holders permit the roving to travel freely with a steady, gentle pull that never overstresses.

The overhead universal joint suspension of each holder leaves the creel board free from obstructions with nothing for the lint and fly to cling to. Consequently there can be no bunching to cause slubs that stretch and break the roving.

Yarns run true in size and are of a higher quality.

Eclipse Bobbin Holders fit any standard make of machine. Try them on your spinning frames. Send for descriptive bulletin.

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ELMIRA, N. Y.

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B&C

YARNS

MERCERIZED
PRESHRUNK
BLEACHED
NATURAL
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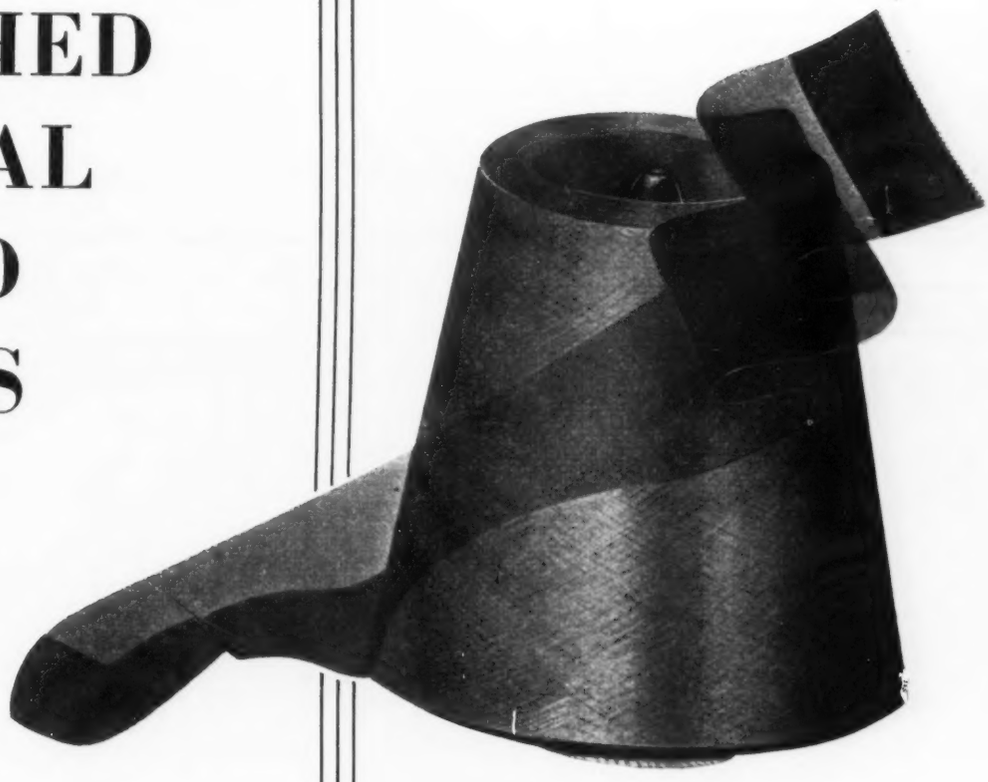

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Novelty yarns—of cotton, worsted, wool, mohair, rayon, silk—in all fashionable combinations and effects and in many original effects. Write for samples.

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30's to 120's Combed, Natural and Mercerized. One, two, and three ply skeins, cones, tubes, and ball warps. Fugitive tinting in a wide range of shades.

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Watch for our announcements in each issue of Textile World

IF You Sell *Good* Yarn Ship it on *Good* Cones . . .

You put extra effort and extra money into your yarn to bring it above the average quality. But these extras go for naught if the yarn reaches your customer on crushed cones. Then the quality is forgotten. What sticks in the customer's mind is the cost and bother of rewinding. And this does not encourage reorders. Be safe! Ship on Pairpoint Cones and Tubes. Pairpoint comes through the sudden drops and hard knocks of shipping without a dent. The specially impregnated paper is tough and resilient. Form and balance are true for greater strength. Remember that the quality of your yarn must be protected after it leaves your mill — *and ship on Pairpoint Cones.*

P

Send us your specifications. We'll gladly send sample Pairpoint Tubes and Cones. Compare them with what you've been using. And compare the prices!

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New Bedford, Mass.

OSCAR HEINEMAN CORPORATION

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ARMITAGE, FAIRFIELD and WASHTENAW AVENUES, CHICAGO

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Bleached . . . Unbleached

Superfine

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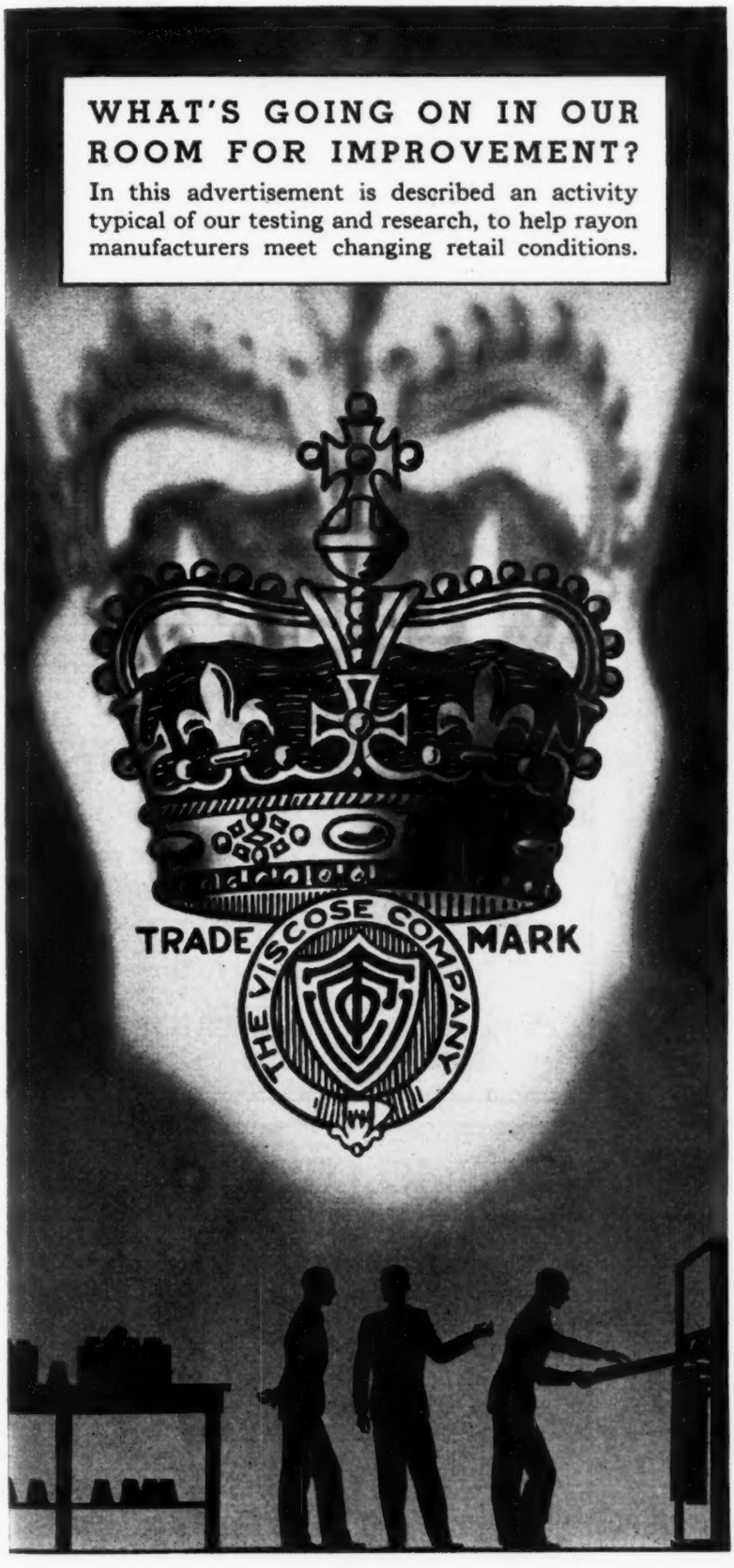
S. C. MURFITT & CO.

200 Summer St., Boston, Mass.

A REGULAR "FRAME-UP"


WHAT'S GOING ON IN OUR ROOM FOR IMPROVEMENT?
In this advertisement is described an activity typical of our testing and research, to help rayon manufacturers meet changing retail conditions.
TRADE
THE VISCOSE COMPANY
MARK

FOR A FINER RAYON YARN

IN SKEIN inspection, Crown Brand Yarn is examined yard by yard. But in our Room for Improvement we study sample strands inch by inch.

The yarn is wound over black canvas frames with each strand separate and silhouetted against the dark background. Every inch now stands exposed for ready inspection, so inch by inch, frame by frame, we check again the quality of all our yarns.

The knitter and weaver find so many factors to watch in the production of present-day rayon merchandise . . . costs, qualities, retail demands . . . that it is gratifying to deal with a house that does all the needful watching on the score of the yarn itself.

THE VISCOSE COMPANY
200 Madison Avenue New York City
"The Crown is your buying-guide to good rayon"

CROWN
RAYON YARNS

Indanthrene Work by *Specialists*

INDANTHRENE
•
SUNFAST
•
SULPHUR
•
DIRECT
•
DEVELOPED

Colors

WITH the swing back to quality—Indanthrenes are again coming into their own. Globe has long specialized in this class of work. A personnel thoroughly experienced in the handling of these colors is ready to cooperate with you.

In keeping with today's varied needs, Globe's color repertoire also includes shades for a wide range of yarn processing requirements. Fastness — uniformity — depth — are *known* factors when Globe does the processing. Color matching is consistently accurate.

You can profitably use such a service. Let us prove it.

GLOBE DYE WORKS CO.

KINSEY AND WORTH STS., FRANKFORD, PA.

Dyers, Bleachers and Mercerizers of Cotton Skein Yarn and Warps

Dyers of Rayon, Spun Rayon, Linen, Ramie and Jute Yarns

THOMAS H. BARKER'S SONS CO.

ESTABLISHED 1870

GLADWYNE, PA.

•

SPINNERS

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WOOLEN YARNS

RAYON YARNS

Inquiries on Special Yarns Invited

A COMPLETE TEXTILE TESTING SERVICE

Raw Silks *Yarns* ∾ *Rayons* *Fabrics*

TESTING and CONDITIONING

for rates apply to the

AAA Silk Laboratory, Inc.

26 West 38th St., New York City

W. J. KLOTS

RAW SILK CLEANER CO. Inc.

The Perfect Slub Catcher

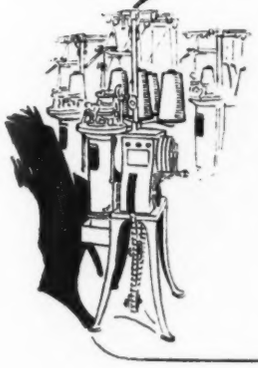
"It Stays Put"

Sales Agents

Lavigne & Suter

200 Fifth Ave., New York City

You Can Count on CHARDONIZE *all along the line*



From the moment the uniform, well-wound cones come into your mill, on through every process of manufacture and selling, Chardonize dull lustre yarn will contribute to your chances for profit. • Ask fixers and knitters about the running quality of Chardonize. They will tell you, "Fewer breaks", "Smoothest yarn we ever had on the machines", "Saves us time". • Then when your merchandise is ready for the market, show the Chardonize label to buyers. You won't have to sell the yarn-quality or fashion-rightness of your product. The label will do that. For it is the merchants themselves who first acclaimed Chardonize nationally—who are today promoting Chardonize in their stores—advertising Chardonize by name to millions of women from coast to coast. Their efforts are part of a concerted market expansion program to strengthen even further the preference for Chardonize stockings and underwear.

Today, if you are to sell it, your product must be right—in quality, price and acceptance. Let Chardonize help you make it right. Chardonize will back you up—in mill and market.

It's in the yarn

TUBIZE CHATILLON CORPORATION, 2 PARK AVENUE, NEW YORK

MAKERS OF VISCOSE, NITROCELLULOSE AND ACETATE YARNS

Tubize

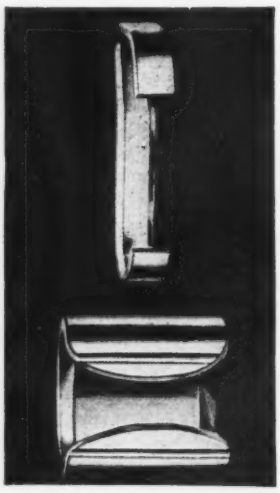
IT'S THE EDGE

—That Prevents Fly Waste and Split Ends

The swirling of the end in passing through the traveler produces smooth even yarn.

This in turn reduces the fly waste to a minimum in the Spinning and Twisting of Cotton, Wool, Worsted, and Asbestos, also reduces the number of split ends in the throwing of Real and Artificial Silks.

BEVEL



EDGE

The Bowen Patented Bevel Edge

The Bowen Patented Vertical Offset

and

The Universal Standard Ring Travelers

.....Are the result of combined research and experience in manufacturing Ring Travelers and backed by most modern mechanical equipment. It is to your advantage to try these travelers. Made in all sizes and weights to meet every ring traveler requirement.

Write for Samples

U. S. Ring Traveler Co.

PROVIDENCE, R. I.

ANTONIO SPENCER, *Pres.* AMOS M. BOWEN, *Treas.*

U.S. RING TRAVELER CO.

Sales Representatives

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SOUTHERN Wm. P. Vaughan
Oliver B. Land

A Traveler for Every Fibre

NOVELTY YARNS

NOVELTY YARNS

Merry Christmas
and
A Happy New Year

To all our customers and friends. We look forward with pleasure to serving you during the coming year.

NOVELTY YARNS

MONTGOMERY
WINDSOR LOCKS, CONN.
Designers and Spinners of Novelty Yarns
New York Salesrooms - 468 4th. Ave.

MURDOCK Bobbin Holders

We now make a holder with especially constructed Lugs for holding the

Automatic Bobbin

also the Regular Filling Bobbin having 1 3/16 inch head.

If you are using automatic bobbins let us send you a set.

Write us regarding all matters pertaining to bobbin holders, as we make many kinds, and are sure we can be of help to you.

MURDOCK & GEB CO., Franklin, Mass.
Manufacturers of Bobbin Holders for Over Thirty Years

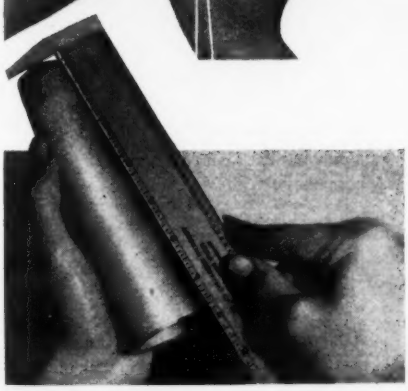
William Bodden & Son, Limited

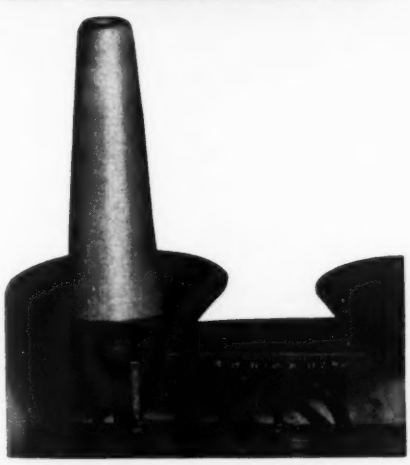
The "BODDEN" Flyer

FOR QUALITY OF FINISH
FOR QUANTITY OF PRODUCTION
HAS STOOD THE TEST OF YEARS

Sole Agents for U. S. A.
Thomas Mayor & Son, Olney Street, Providence. R. I.

PRECISION MADE *by Machine*





As early as 1901 SONOCO graduated entirely from the process of manufacturing by hand, when we designed and built the first practical machine to make paper cones. Today Sonoco Cones are made by an exclusive Sonoco process with special machines and equipment designed and built in our own shops, and such as are used by no other manufacturer of Cones in America.

Because of these machines and processes Sonoco Products are built to the highest known levels of accuracy possible in products of this type. Largely because of this superior equipment are Sonoco Cones so widely recognized and used for their dependable uniformity and precision.

Uniform precision in Sonoco Cones means simply this. They fit the winding mandrel accurately and snugly to run with the same steady exactness as the machine itself. The degree of the taper, the thickness of the wall and even the weight (hardest of all to control) are held to an almost machine-like accuracy. Certain slight variations occurring because the grade of paper stock used cannot be absolutely controlled in its manufacture, are materially off-set by the Sonoco machine process of building cones and tubes.

Consider what these superior features in Sonoco Cones mean, coupled with the special Sonoco-processed surfaces made for every type of winding job. The result is a uniformly perfect package that insures smooth, even delivery of yarn to knitting machine, sewing machine or creel under high speed working conditions.

SONOCO PRODUCTS COMPANY

HARTSVILLE • SOUTH CAROLINA

Mills: Hartsville, S. C.; Rockingham, N. C., and Plainfield, N. J.

Eastern Sales Office at 709 West Front Street, Plainfield, N. J.

New England Sales Representative: P. O. Box No. 170, New Bedford, Mass.

The Halliwell Company

Pawtucket, Rhode Island

Dyers, Bleachers and Mercerizers of Cotton Yarns

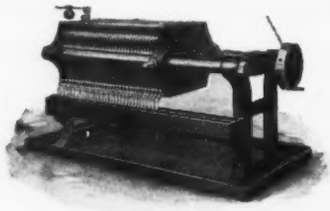
A new plant, latest and most modern machinery and equipment, backed by more than forty years of specialized experience, guarantees service and satisfaction

GUARANTEED in weight, temper and style. Back of this guarantee is a 25-year experience, skilled workmanship, specially drawn stock, and an enormous amount of research and experiment in high speed traveler manufacture. Write for samples and prices.

The Dary Ring Traveler Co.

Taunton, Mass.

F. H. DARY B. G. DARY
John E. Humphries, Box 843, Greenville, S. C.
Charles L. Ashley, Box 720, Atlanta, Ga.



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For Manufacture of RAYON

D. R. SPERRY & COMPANY

Batavia, Illinois

H. E. Jacoby — 95 Liberty St., New York, N. Y.

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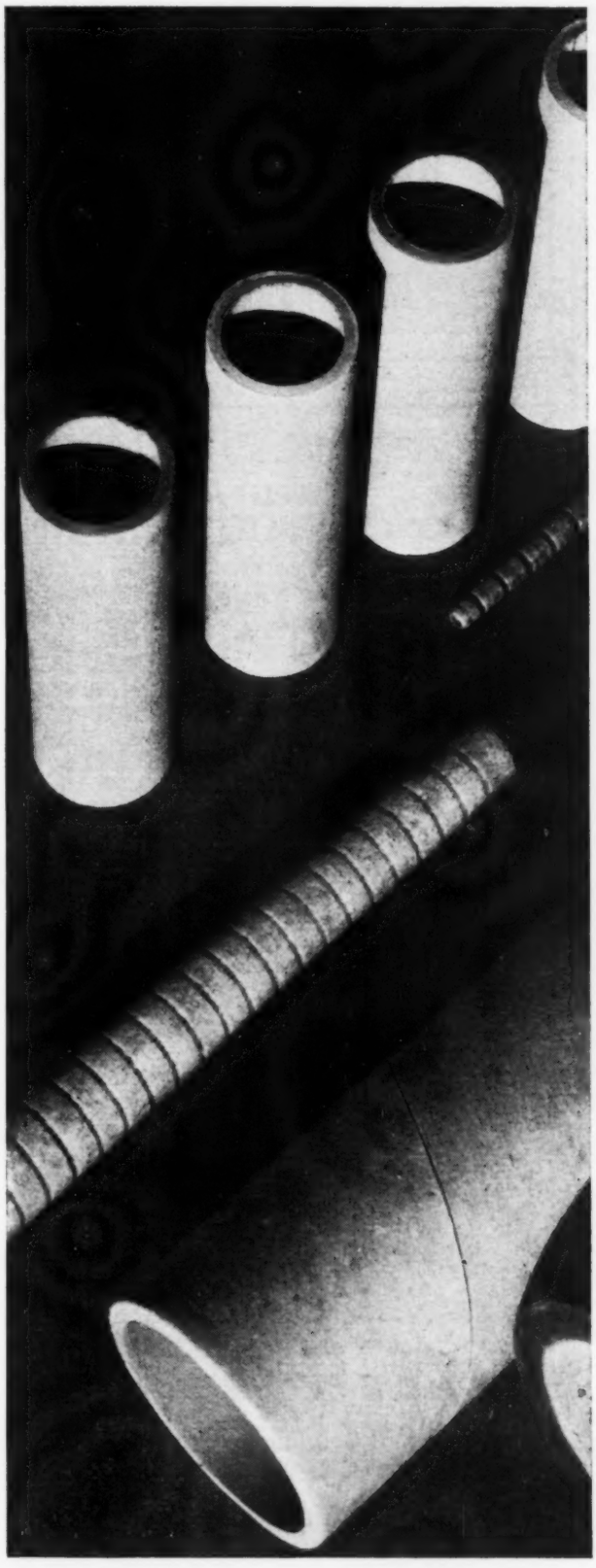
MERCERIZE, BLEACH and DYE

Cotton Yarns, Tapes, Braids, Threads, Hosiery, Rubber Linings, etc., Coning, Tubing, Reeling. Bleaching and Dyeing Rayons a specialty.

Direct, Sulphur, Sunfast and Vat dyes, dyed on cotton and rayon



Not all risks are foolish

Every successful business man takes a chance — when he has to. Nothing ventured, nothing gained is a commercial axiom. The timid soul is indeed a pitiable figure in any sales manager's eyes.

But there is a tremendous difference between genuine courage and foolhardiness. You can't afford to gamble on any detail of plant equipment. This must be dependable—a sure bet.

You can trust Climax Textile Tubes. There is nothing experimental about them. Not only are they dependable, they are safe and economical as well. May we tell you more about Climax Tubes?

CLIMAX TUBE COMPANY

Mills: Mystic, Conn. **Lowell, Mass.**

RAGAN

COMBED YARNS

The Ragan Spinning Company, manufacturers of high grade combed yarn, wishes to extend the season's greetings and best wishes for prosperity during the coming years to their many customers and friends.

RAGAN SPINNING COMPANY
GASTONIA - - NORTH CAROLINA
Phone No. 8

THE KENT MFG. CO.

Clifton Heights
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WOOLEN GOODS and WORSTED YARNS

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WARNER J. STEEL

Worsted Yarns

for Weaving and Knitting

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Mills and Office: Bristol, Pa.

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A Purely Vegetable Tanned Product for the Textile Trade

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Superior in texture and finish.

Long wear and satisfaction assured.

We have had over 60 years' experience in tanning fine leathers.

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Direct Factory Representatives for the South
THE PEARSE SLAUGHTER BELTING COMPANY
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CARD STAMPING and REPEATING

for ALL TEXTILE FABRICS

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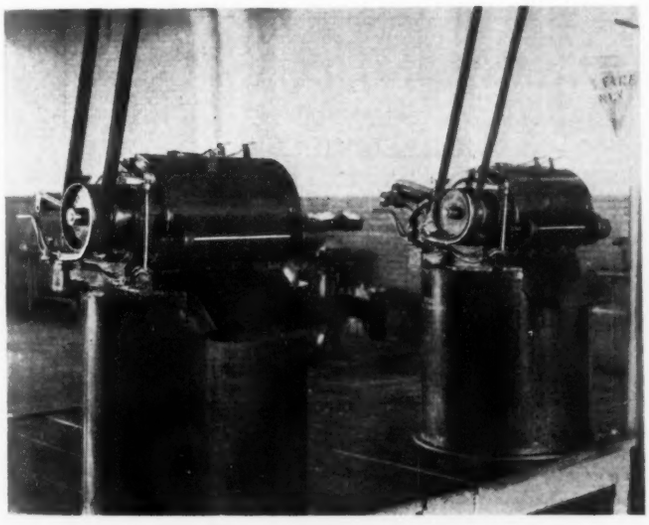
(COTTON YARNS)
CARDED YARNS IN HEAVY NUMBERS

J. H. SCHOOLFIELD, *Representative*



2 TERMACO
ROVING BOBBIN CLEANERS

Giving Satisfactory Results at

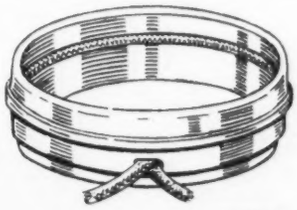
Pepperell Mfg. Co.
Opelika, Ala.

Here, in this progressive mill, as in scores of others, Termaco Roving Bobbin Cleaners are giving perfect satisfaction . . . real freedom from bobbin worries.

THE TERRELL MACHINE CO., Inc., Charlotte, N. C.

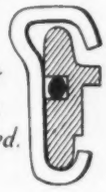
Mr. Luther Pilling, Danielson, Conn., representative for N. Y., N. J., Pa., New England States and Canada.

Geo. Thomas & Co., Ltd., Manchester, England, Agents for Great Britain and Continental Europe



Patents granted and pending

Oil is supplied at actual contact, where most needed.



Continuous automatic lubrication which is adequate yet clean

(Patents granted and pending)

TO succeed, automatic ring lubrication must be 1. Continuous. 2. Adequate. 3. Clean. The exclusive patented feature of our DIAMOND FINISH Eadie Ring is that the traveler receives lubrication continuously all around the circumference instead of in only one spot. The oil reaches the traveler at the point of its contact with the ring. Since the oil is delivered directly to the traveler we can use a thicker oil than on a one-spot ring, giving truly adequate lubrication. The oil does not fly off, and the rings remain clean in operation.

Whitinsville (Mass.) SPINNING RING CO.

Thank you

. . . mill owners for the enthusiastic response to the introduction of our Improved Breton Minerol Process Equipment (Patents Pending) exhibited as below at the recent Southern Textile Exposition, Greenville, S. C.

BRETON MINEROL PROCESS PATENTED

A method of conditioning for moisture control and lubrication to the fibre by spraying the raw stock with MINEROL.

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17 BATTERY PLACE. NEW YORK

Thos. Wolstenholme Sons & Co., Inc.
Frankford Ave. & Westmoreland St. Philadelphia, Pa.
P. O. Station "E"

Underwear
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YARNS

Colors, Oxfords and Fancy Mixes

French and English Spun Worsted
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Representatives: BOSTON—Perkins & Boland, 99 Chauncy St.
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FRANKEL BROS. & CO.
42-48 Commercial St.,
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OUR SPECIALTY: We grade new woolen clippings ready for the picker. Write for samples and prices. Correspondence solicited.

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Established 1888
GREENVILLE, S. C.

SOUTHERN TEXTILE STOCKS

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(Send for our latest list of quotations)

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We have had extensive experience in locating sites for new textile developments, and offer you our services in this line.

CRANSTON WORSTED MILLS
Bristol, R. I.

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Mohair
Worsted and
Novelty Yarns

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Now—The Bristol, R. I., Plant of the
COLLINS & AIKMAN CORP.

1871 1932

"HOW FAR THAT LITTLE CANDLE THROWS HIS BEAMS!"

. . . so shines unswerving sportsmanship

in a tangled world.

THERE is no sportsmanship that is not blood-brother to responsibility. In gentler times that fact escapes the eye. To-day it stands, sharp-etched against the economic sky.

Slowly the storm is yielding to the sunshine of renascent enterprise, disclosing the experienced purchaser who has kept faith with his common sense and with the fundamental fairness of settling our affairs upon the facts, and revealing—perhaps a little grimly—the Bold Bad Man in the full light of the old Rules.

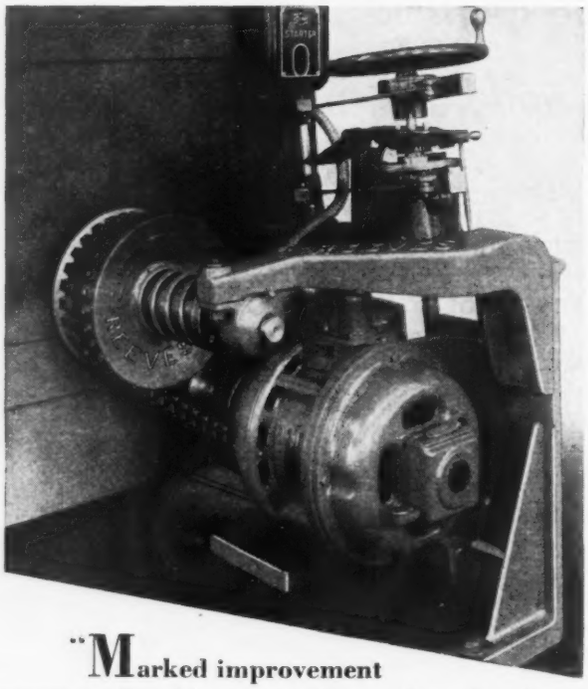
Now, to-morrow, always—the experienced and the thoughtful will want to know the facts about their sources of supply. Certain it is that the Merchant's job is to know and provide *sound* sources which meet the tests of quality and a fully developed sporting sense of exact responsibility.

JAMES E. MITCHELL COMPANY

AN ENVOI FOR 1933

PRAISES NEW REEVES DRIVE

Exposition Cotton Mills Superintendent Tells of Results with Automatic Variable Speed Spinning and Twister Frame Unit



"Marked improvement in evenness, breaking strength, number of ends down—and a *material increase in production*—are shown on frames where this drive is installed," says A. E. Massey, Superintendent of the Exposition Cotton Mills, Atlanta, Ga. "This convinces us that the principle of varying the speeds with the diameter of the bobbin is correct."

A typical report. Other mills, where the REEVES Variable Speed Spinning and Twister Frame Drive is installed, are showing equally successful results. Accurate automatic variable speed control of spindle and front roll speeds in ring spinning is here at last. A development of the well-known REEVES Variable Speed Transmission. Remarkably compact. Quickly installed on new frames or frames now in service.

Send for Report on Mill Tests

One mill cut time per doff 45 minutes, and increased production 25 per cent with the REEVES Automatic Variable Speed Drive. Complete data on this and other interesting check-ups contained in new book "Tests," which also describes operating principle and construction. Send today for this book, W-300.

REEVES PULLEY COMPANY, COLUMBUS, INDIANA

★ REEVES ★

SPINNING and TWISTER FRAME DRIVE

SCOTT

WE ARE the sole manufacturers and patentees of the "SERIGRAPH" — a tensile test machine for silk and other textiles. Both the name and the machine are fully protected. Manufacturers, Dealers and Users please note!

HENRY L. SCOTT COMPANY
PROVIDENCE, R. I.

TESTERS

Drop Forgings
Wrenches Screw Machine Work
Bolts Nuts Cap Screws
Eye Bolts Studs

We specialize to the Textile Trade

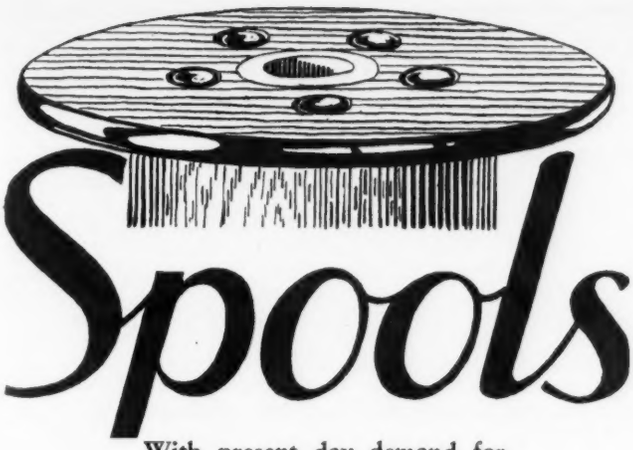
RHODE ISLAND TOOL CO.
PROVIDENCE. R.I.

LINGERIE BRAIDS

WE offer a complete line of high quality braiders for manufacturing lingerie braids; also shoe and corset laces.

Write us for our 1932 Catalog

NEW ENGLAND BUTT COMPANY
DEPT. T-12, PROVIDENCE, R. I.
CHICAGO OFFICE: 20 NORTH WACKER DRIVE

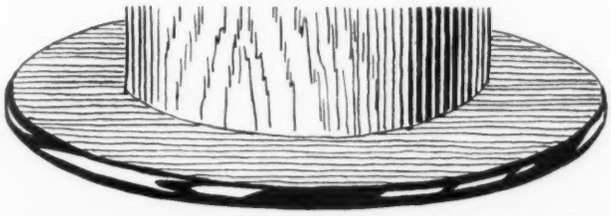


Spools

With present day demand for heavier yarn, a larger, stronger spool is required. *Clover Leaf Spools* are constructed to meet these demands and have the strength and durability for heavy work.

Let us quote on your requirements.

CLOVER LEAF MFG. CO.
HONESDALE, PA.



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U. S. BINDING

We make a Specialty of Binding and Narrow Fabrics

TRADE MARK

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Manufacturers of

Tapes, Bindings and Narrow Fabrics

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•AUTHORITY

"DESIGN PATENTS" now make ownership protection an accomplished fact, backed by the authority of the United States Government.

From now on, printed silks may leave their point of origin to be safely guided and protected on their course through the channels of a trade which will view the approaching season with new assurance.

We heartily endorse these advanced measures for the protection of our customers and friends. And we invite the use of our facilities to secure design patents in their own names, and to help preserve the future validity of such patents.

The trade's enthusiastic approval of this method of establishing definite design originality is unmistakably shown in the numerous applications already filed by those whom we are privileged to serve.

U P W D

TRADE MARK REG.
"The Hallmark of Quality"

United Piece Dye Works

DYERS, PRINTERS, FINISHERS OF TEXTILE FABRICS IN THE PIECE
SCIENTIFIC WEIGHTING - - SKEIN DYEING

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Simplify Your Rayon Processing

Use

Laurel *Rayon Oils*

Try them on your next job. Notice how their unusual lubricating and emulsifying properties increase the workability of your rayon; how they prevent roughing; how easily they are extracted; how their thorough penetration insures level dyeing; how they leave your rayon soft, pliable, strong.

Use

Laurel *Rayon Size*

For skein or warp. Strengthens and coordinates your rayon fibers. Makes rayon yarn more resistant to wear and tear of loom by adding lubricity and softness. Easily removed by light soaping.

Use

Laurel *Rayon Aids for clean, soft rayon*

Laurel Green Olive Oil Soap
Laurel Soluble Pine Castor
Laurel Ruxite
Laurel Textile Oils
Hydrosol

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Olive Oil Gelatin Cocoanut Oil

If you have a problem, our laboratory will gladly work with you.

Laurel Soap Mfg. Co.

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WM. H. BERTOLET & SONS
2606 EAST TIOGA ST. :: :: PHILADELPHIA, PA.

FADE-OMETER

Controlled Sunlight

The New And Improved FADE-OMETER

What the New and Improved FDA Fade-Ometer will do:

Gives an exact answer to the vital question of whether a color is fast or fugitive.

Reproduces any condition to which your product may be subjected.

Controlled voltage, temperature, humidity. Cuts costs. Saves time. Reduces risks.

You have a positive answer to the light fastness of colors before you put your product into production.

Send for Bulletin No. TW32.

ATLAS ELECTRIC DEVICES CO.
361 W. Superior St., Chicago, Ill.

Leaves raw stock clean . . . soft!

A little Oakite added to your raw stock boiling off formula is all that is needed to reduce harshness, assure complete rinsing, improve the penetration of the dye.

The safe, detergent action of Oakite helps produce, day after day, a cleaner, softer stock that takes more uniform colors, that is in better condition for carding and spinning.

Write for helpful data on your particular work. No obligation.

Manufactured only by
OAKITE PRODUCTS, INC., 42 Thames St., NEW YORK

OAKITE

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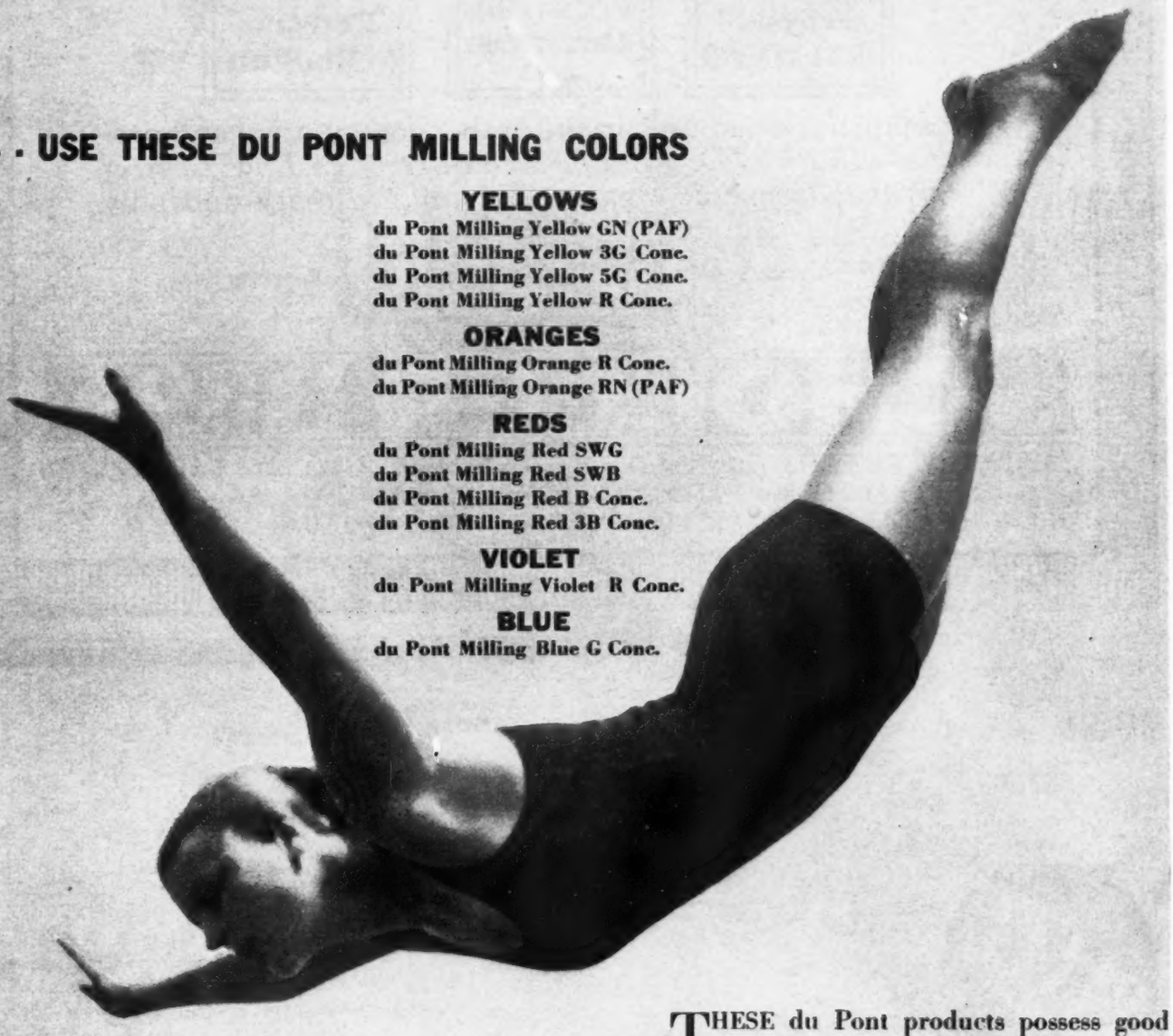
Industrial Cleaning Materials and Methods

Give your bathing suit yarns

GOOD FASTNESS PROPERTIES



. . . USE THESE DU PONT MILLING COLORS

YELLOWS
du Pont Milling Yellow GN (PAF)
du Pont Milling Yellow 3G Conc.
du Pont Milling Yellow 5G Conc.
du Pont Milling Yellow R Conc.

ORANGES
du Pont Milling Orange R Conc.
du Pont Milling Orange RN (PAF)

REDS
du Pont Milling Red SWG
du Pont Milling Red SWB
du Pont Milling Red B Conc.
du Pont Milling Red 3B Conc.

VIOLET
du Pont Milling Violet R Conc.

BLUE
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DU PONT
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DYES FOR WOOL

THESE du Pont products possess good fastness to washing, salt water, perspiration and light. They are well adapted to the dyeing of yarns for the manufacture of bathing suits.

The milling colors are also widely used for dyeing both pure and tin-weighted silks; particularly for weighted silks because of their generally good affinity for this fiber. They are also used as shading colors for the wool in cotton and wool unions because of their excellent neutral dyeing properties.

Write for samples and prices today.

E. I. DU PONT DE NEMOURS & COMPANY, INC.
Dyestuffs Division, Wilmington, Delaware
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That's why so many bleachers or dyers specify STAR Brand Silicate. You can be sure of uniform results. STAR Brand has been known to the industry for more than a quarter of a century.

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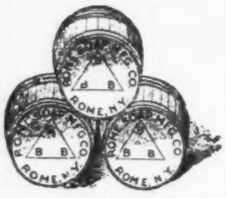

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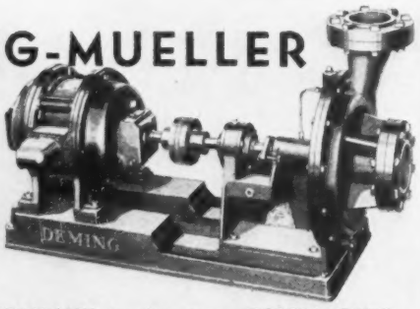

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Everything for Textile Printers
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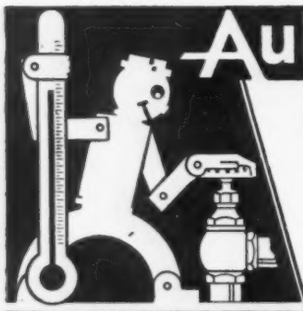

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TRADE-MARK REG. U. S. PAT. OFF.
FOR BETTER RAYONS

FOR RAYONS

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The several types of Brilliant Avirol are sulfonated fatty alcohol products with outstanding qualities as finishing materials for all types of rayon as well as for fine cotton and woolen fabrics. They also serve as assistants for scouring, bleaching and dyeing.

1. *They offer a selection of a range of softening and lubricating values. Their extreme stability assures uniform results under all processing conditions.*
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They are especially recommended for preparing, dyeing and finishing of all types of synthetic and natural yarns, and fabrics.

Among the difficulties in the manufacture and finishing of rayon yarns and fabrics is the prevention or elimination of precipitated lime soaps and liberated free fatty acids. When soap is used for the cleansing of rayon during the final finishing steps, even the slightest lime soap precipitation will adversely affect the ultimate results. These precipitates are difficult if not impossible to remove and cause great difficulty in the dyeing operations, with uneven coloring almost invariably resulting under normal procedure.

Because of the stability, softening and lubricating qualities of Brilliant Avirol, the various types are especially suitable for use in the manufacture and finishing of rayon. These types of Brilliant Avirol possess varying degrees of softening and lubricating qualities. They also promote levelness in dyeing and may be used with a double purpose in many cases.

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And Duriron Pot Eyes are proof against the bleach or dyes, do not collect verdigris, and there is absolutely no wear-out to them.

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It is our sincere wish that the bells of Yule-tide are ushering in for you a new era of happiness and prosperity.

It is gratifying to find that there is still an appreciation of real values, and we are deeply grateful for the fact that an ever-increasing number of satisfied users bear witness to the efficiency and economy of Wyandotte Products.

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Actual Production Savings Made NON FLUID OIL Famous in Textile Mills

Save money on production!

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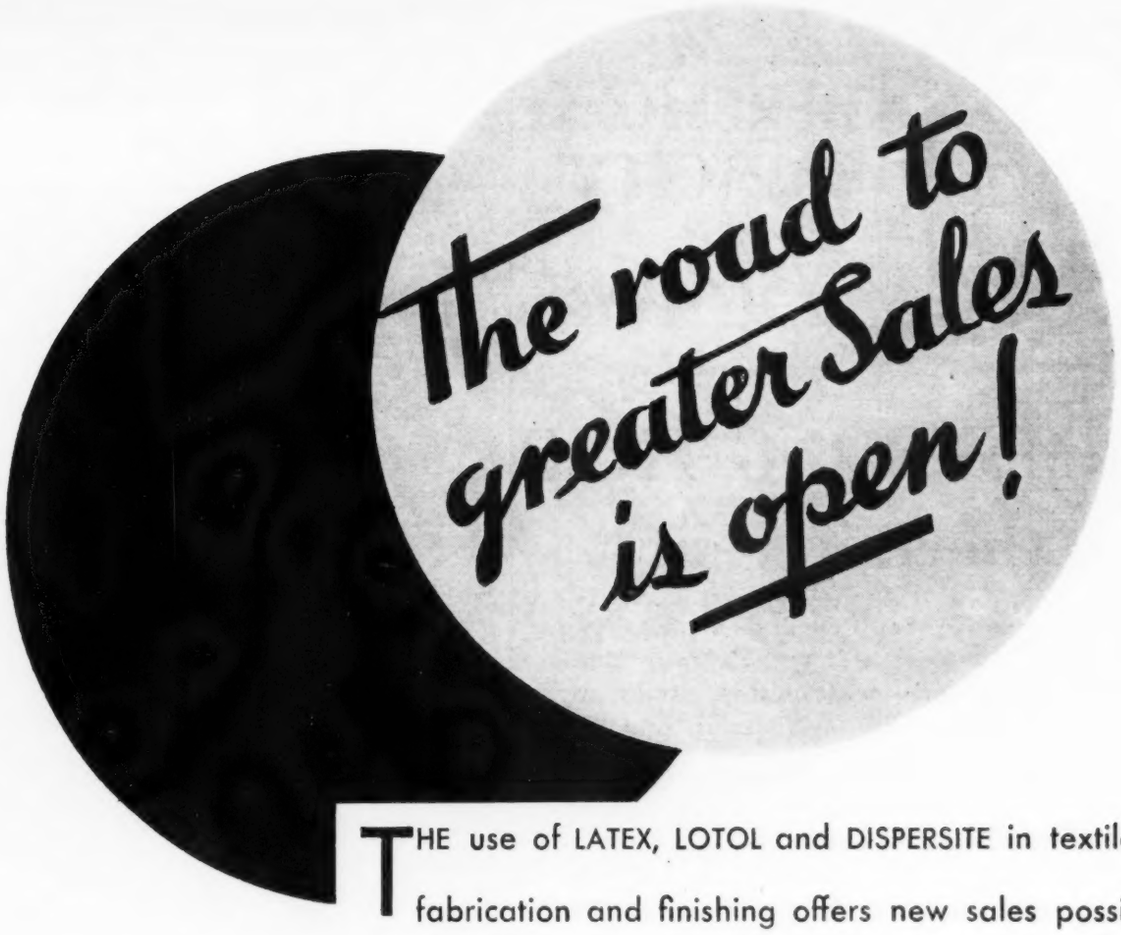

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With these new materials and your present equipment you can improve old fabrics . . . and create new markets. Impregnating, sizing, coating, locking, combining and "setting" fabrics by means of these forms of rubber have greatly stimulated the textile industry.

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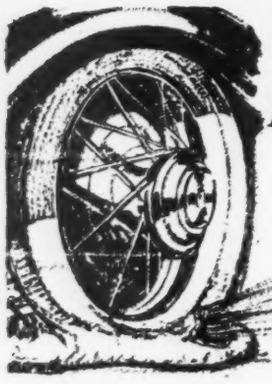

Get the AIR-REMOVAL CAPACITY of a "Blowout" with a new ARMSTRONG TRAP thermic vent

THE exclusive Armstrong development shown at the left below will vent air many times as fast as the ordinary steam trap. Almost any desired air removal capacity can be provided.

The standard Armstrong Trap vents air automatically as shown at the lower right and for most types of service this arrangement is entirely satisfactory. The thermic vent is added when submerged coils, unit heaters, steam heated cylinders or other similar installations require the extremely rapid elimination of a very large volume of air.

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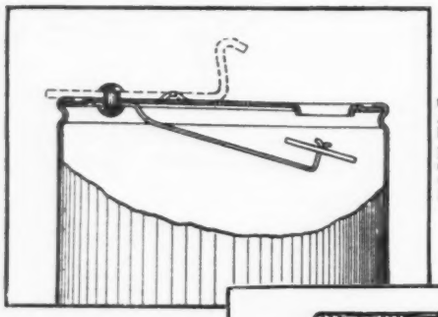
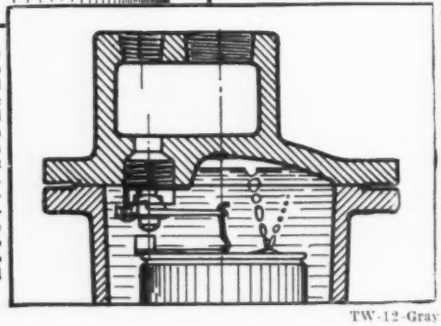
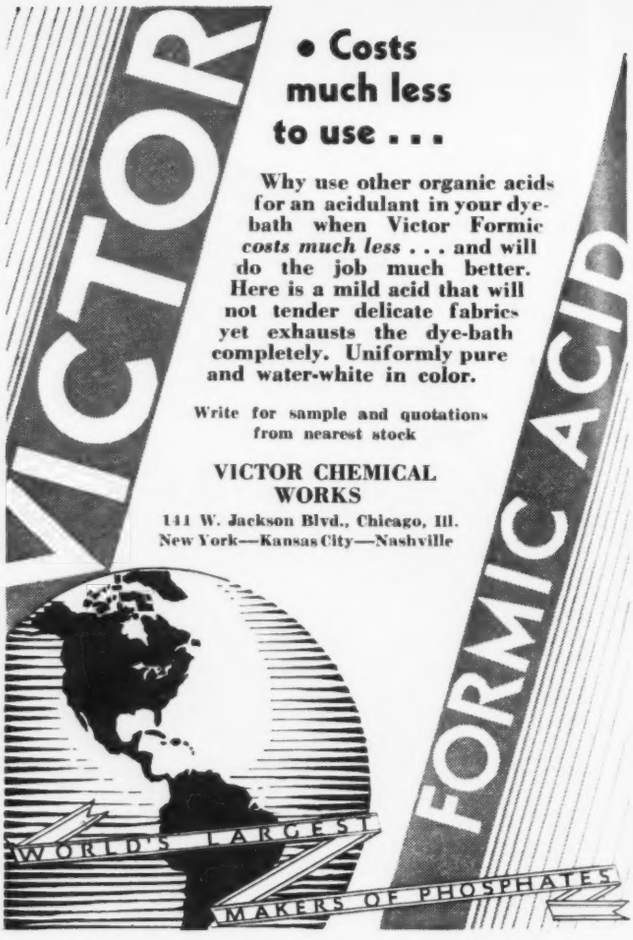


Below: The air vent in the top of the inverted bucket in an Armstrong Trap prevents air binding. Any steam that passes through the small standard vent is condensed to make up for radiation loss from the trap.



Above: The large vent is closed by a flat disc fastened to the end of a strip of thermic metal. When the trap is cold the vent is open as shown allowing air to pass through so rapidly that the bucket cannot float and the discharge orifice therefore cannot be closed. As the temperature in the bucket rises, the bending of the thermic strip closes the vent and the trap functions in the normal manner.

TW-12-Gray



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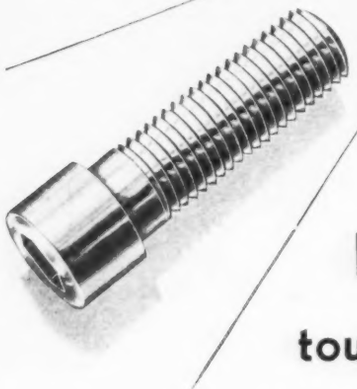

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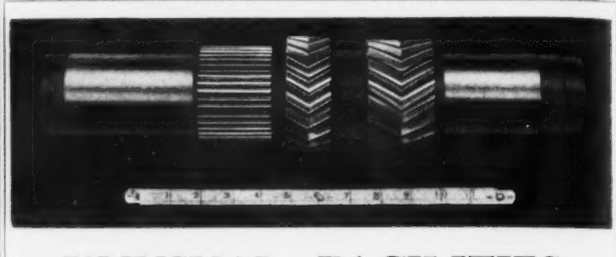

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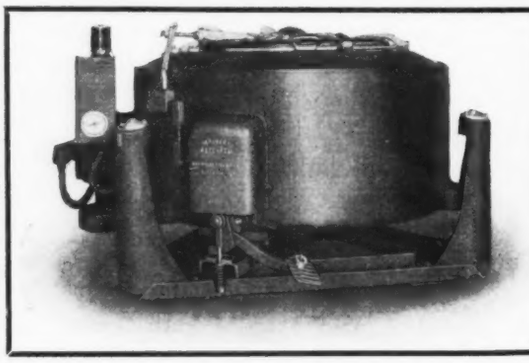

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E. I. DU PONT DE NEMOURS & COMPANY, INC.

Dyestuffs Division, Wilmington, Delaware

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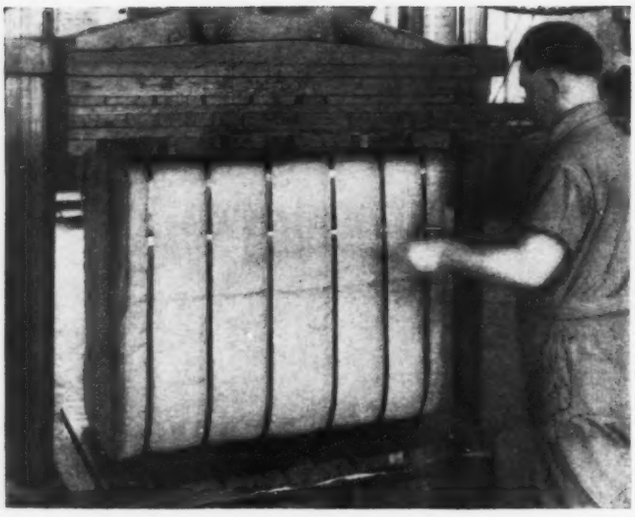

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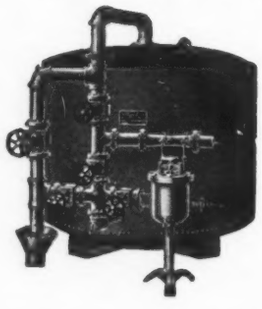

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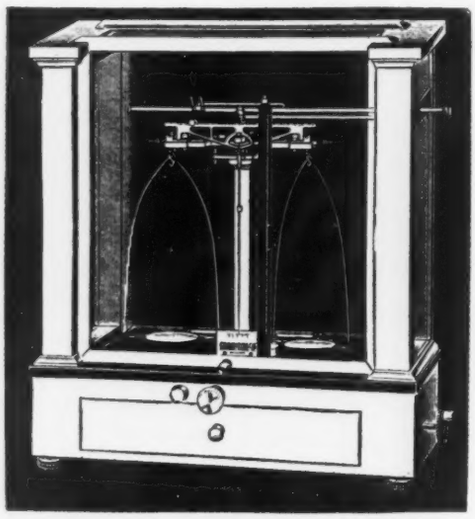

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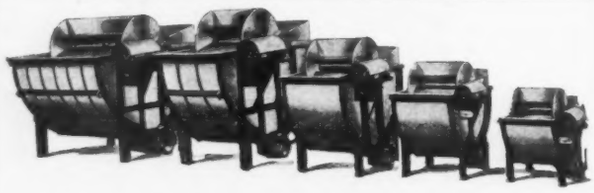

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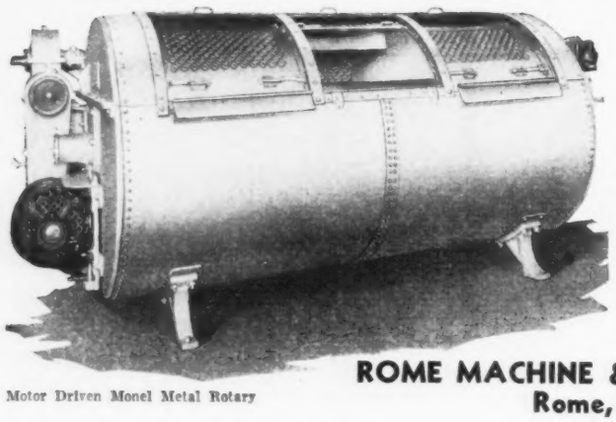

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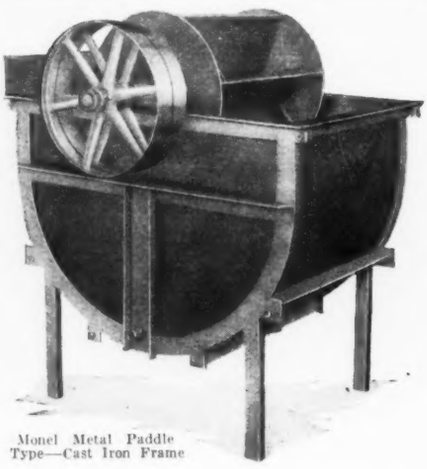

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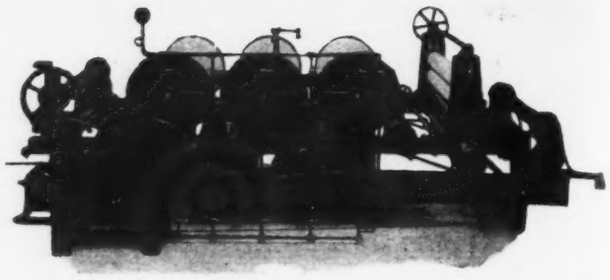

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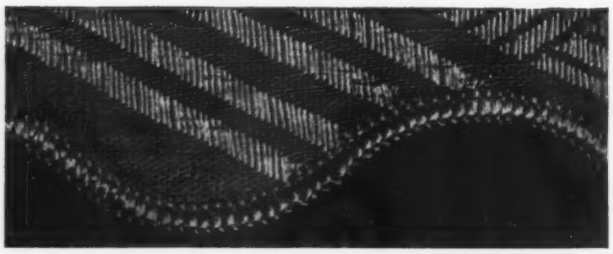

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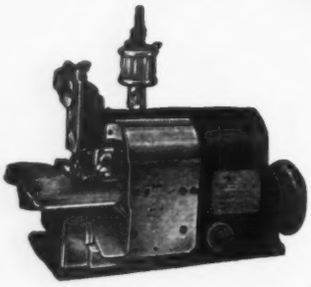

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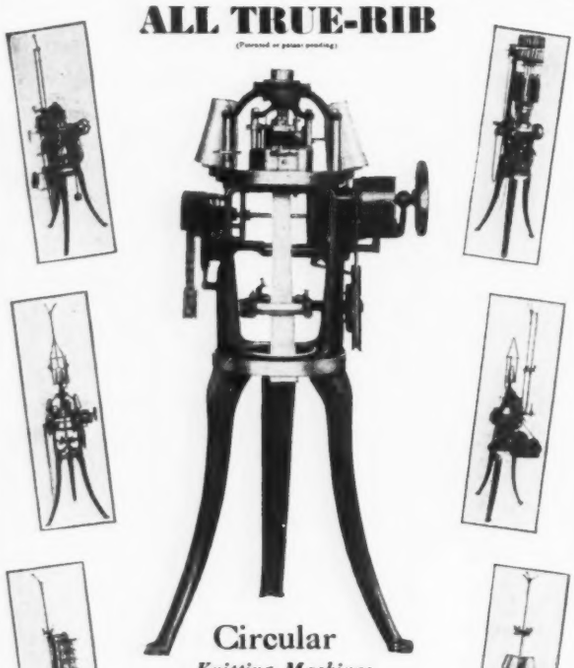

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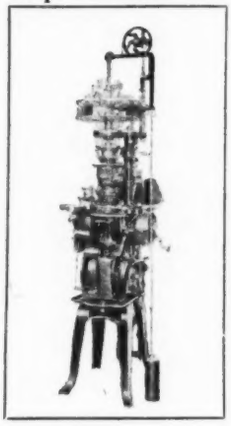

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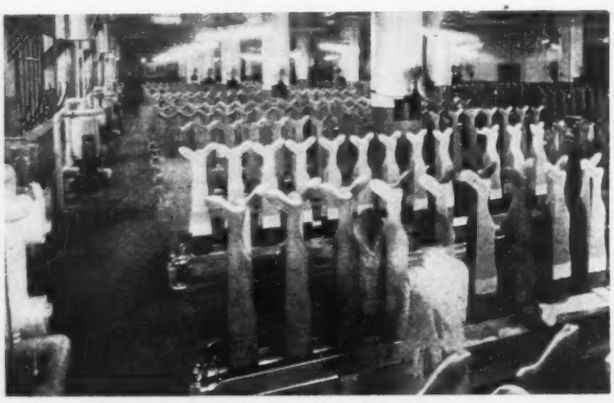

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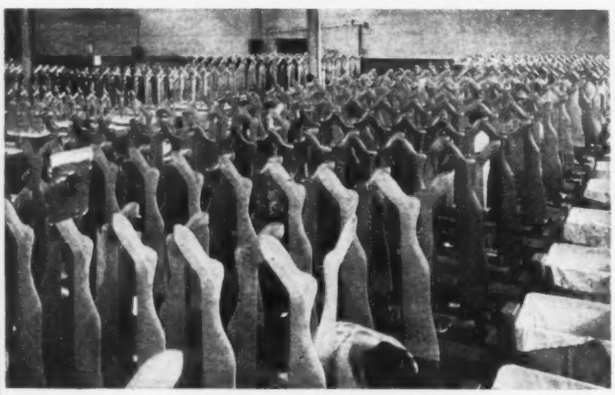

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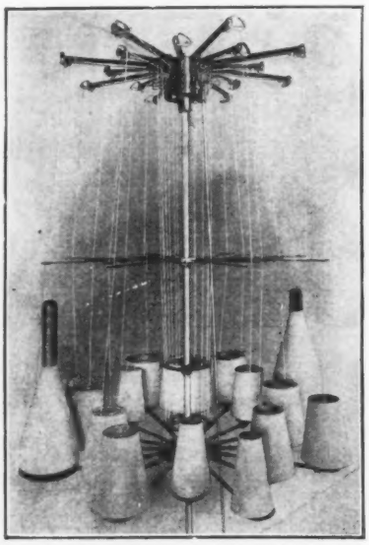

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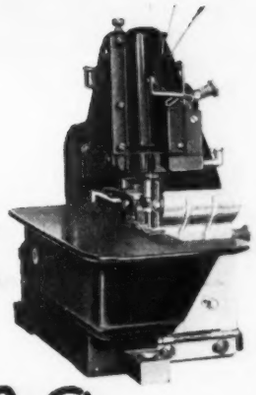

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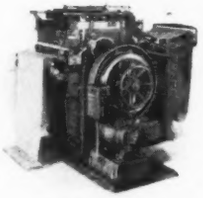
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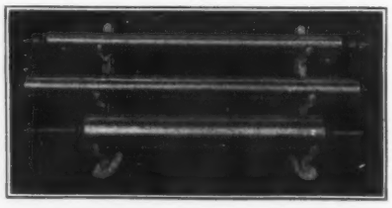

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Special facilities for furnishing rolls and drums, dynamically balanced if necessary.

Rolls of alloy steel, iron, aluminum, brass, carbon steel, sand iron made up to meet the particular requirement of the textile industry.

CAMERON MACHINE COMPANY
61 Poplar Street, Brooklyn, N. Y.

Knitted OUTERwear deserves the preference ©

— WHY THE —

Knitwear Industrial Exposition

Knitted OUTERwear deserves the preference ©

The use of Knitted Outerwear has more than doubled in the last three years. Knitted garments and accessories continue to enjoy increasing buyer demand.

Because of this favorable trend the Allied Trades (suppliers to the Knitting Industry) have urged the

NATIONAL KNITTED OUTERWEAR ASSOCIATION

to hold an Exposition where the Allied Trades can display their product and explain their services to both customers and prospects, (Knitted Outerwear Manufacturers and Knitted Fabric Manufacturers) under most favorable conditions.

To provide this market-place there will be held the

KNITWEAR INDUSTRIAL EXPOSITION

February 13-17, 1933

GRAND CENTRAL PALACE

NEW YORK CITY

under the auspices of the

NATIONAL KNITTED OUTERWEAR ASSOCIATION

and coincidental with its ANNUAL CONVENTION.

BUSINESS OPPORTUNITY FOR THE ALLIED TRADES

This Exposition, **conveniently located** in the center of the KNITTED OUTERWEAR INDUSTRY, will be attended by the Association members, owners, superintendents, purchasing agents and other executives of the Industry's 1,000 or more Knitted Outerwear Mills.

Your exhibit in this market place gives you the opportunity to meet these customers and prospects FACE TO FACE and present YOUR products and services FIRST HAND at a small investment.

For complete details wire, phone or write A. B. Coffman, Exposition Manager, 35 East Wacker Drive, Chicago, Ill., or M. E. Thayer, Representative, Room 1126, Grand Central Palace, New York City, Phone—Wickersham 2-0130.

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DID GEORGE READ IT?

"Who is George?" you ask. Well, he's that young man in your organization from whom you have received several money saving ideas in the past. He's a great hand at applying to YOUR production problems methods worked out by men in other plants.

Yes, George should read this issue. In fact, he should read every issue of TEXTILE WORLD—and in the privacy of his own home where concentration is possible. If you see that a copy is directed to his home each month, it will prove to be the best investment you've made in some time.

Let's take for example that department in TEXTILE WORLD titled OVERSEER'S ROUND TABLE. Why I can see our mutual friend, George, working out a solution to the problems as they are thrown upon the table each month for discussion, and then digesting the pro and con as it is presented in the following issue. This keeps him abreast of the methods employed in other plants.

It isn't exactly good business to keep George on a routing list and expect him to read TEXTILE WORLD in the few moments he can spare during his working hours. Neither is it fair to him, nor to yourself for that matter, to have the issue reach him after others have clipped articles.

Let's give George the reward his initiative deserves by filling-in the coupon so that a copy of TEXTILE WORLD reaches him at his home regularly each month.

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THE Ford Motor Company offers for sale the following equipment, which has been released from service in the Ford factories solely because of changes in manufacturing plans. Every machine has had painstaking Ford attention throughout its service, and is in good condition. The desire to dispose of these machines quickly and make use of the space they occupy impels us to set most attractive prices.

This equipment is ready for immediate shipment. Address inquiries to the Ford Motor Company, Dearborn, Michigan.

Ford

No.	*Description*
50	54″ Northrup Looms, 40 picks per inch at the rate of 135 picks per minute.
20	16′ 8″ Fletcher Looms with 12 space straight shuttle batten.
1	No. 2 Atlas Hair Picker, capacity 500 lbs. per hour.
1	Smith & Furbush grinding and cleaning frame.
1	60″ Waldron measuring and winding machine.
1	Saco-Lowell beam warper, 54½″ between heads.
	Also miscellaneous compressing, cleaning and insulating machinery.
	FLAX MACHINERY
3	Fairbairn automatic card feeding machines.
6	Fairbairn double dry spinning frames.
1	56″ automatic loom.
1	60″ automatic loom.
	Also separating and cleaning machinery

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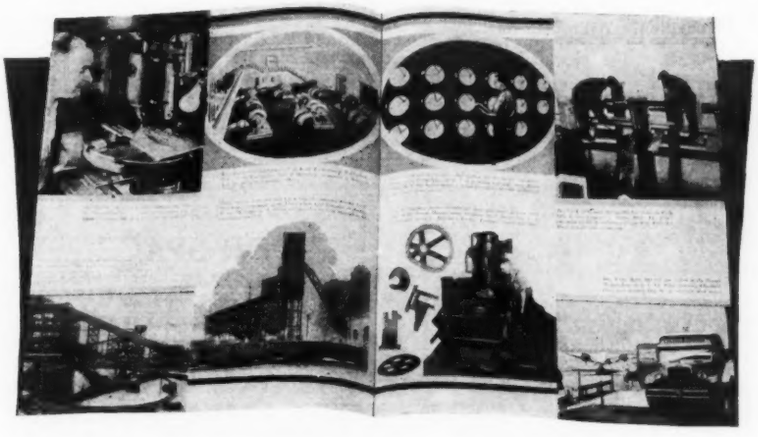

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POSITION VACANT

WANTED: Boss cutter for knit underwear manufacturer. Must be experienced on rayon garments, and cotton and wool, ladies' and children's garments. Do not reply unless you have had experience cutting patterns and handling help. Good opening for high grade man. P-881, Textile World, 330 West 42d St., New York City.

POSITIONS WANTED

ACCOUNTANT or office manager. Ten years' experience spinning and weaving mills, includes bookkeeping, cost accounting and purchasing. Age 33. PW-880, Textile World, 330 West 42d St., New York.

COLLEGE GRADUATE, 27, with four years' textile experience evenly divided between textile chemistry and piece-goods dyeing in large northern plant, desires position. Rapid and accurate shade matching on corset fabrics a specialty. Salary $50. Best of references. Immediately available. Address replies PW-886, Textile World, 330 West 42d St., New York City.

FIXER foreman F.F. hosiery, age 37, good mechanic; 12 years' experience as knitter and F.F. finisher. Last position with Southern mill. References. PW-899, Textile World, 520 No. Michigan Ave., Chicago, Ill.

(POSITION VACANT)

Wanted: An A-1 fixer on Latch Needle Underwear Knitting Machines. State age, experience and compensation required.

P-902, Textile World
520 No. Michigan Ave. Chicago, Ill.

(POSITION VACANT)

Knitter - Designer

Knit piece goods concern requires expert on Circular Jacquard and Brinton Machines. Thorough experience in designing fabrics and creating new stitches and outstanding originality essential. Take complete charge of factory. Consideration will only be given to applicants who have served in similar capacity and with long successful record.

P-891, Textile World
330 West 42d St., N. Y. C.

(POSITION VACANT)

Wanted—Young man with at least theoretical knowledge of manufacturing and actual experience in selling cotton and wool textile fabrics.

Briefly state business experience, education, age, weight, height. Send photograph (which will not be returned).

P-896, Textile World
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POSITIONS WANTED

COLLEGE graduate, age 32, connected for seven years with one of largest textile manufacturers, who has an assistant to major executives worked along lines of budgetary control, forecasting and analysis of sales, release of weaving and processing, control of inventories and all phases of speeding up of inventory turnover, seeks new position. Excellent references as to experience, ability and character. PW-879, Textile World, 330 West 42d St., New York.

DYEING and finishing executive, thoroughly experienced in plant management and operation, with wide knowledge of processing silk, rayon and mixed fabrics, seeks connection as manager or assistant to a busy executive. PW-882, Textile World, 330 West 42d St., New York City.

FIRST-CLASS finisher and sewing machine fixer on all makes of machines is open for position, 25 years' experience; though employed at present, would like to hear from underwear manufacturing concern, where 100% workmanship garment is desired. Good references. PW-872, Textile World, 520 No. Michigan Ave., Chicago, Ill.

FULL-FASHIONED foreman, desires foreman or fixing position. Understands Northern and Southern help. Ten years' knitting and fixing, Reading finisher. Salary very reasonable. PW-894, Textile World, 330 West 42d St., New York City.

INDUSTRIAL engineer, experienced in budgeting, mill planning and scheduling, inventory control, costs, co-ordination of mill production and sales in both cotton and worsted; was on staff of H. L. Gantt, Industrial Engineer; eighteen years' experience; for the last seven years in charge of mill planning. Large cotton and worsted mills. PW-887, Textile World, 330 West 42d St., New York City.

OVERSEER woolen and worsted weaving and dressing. Familiar with Crompton & Knowles Box and Automatic looms. 12 years of experience overseer of spinning on all kinds of woolen yarns. Familiar with Dewes & Furber and Johnson & Bassett machinery. American, 44 years of age. Willing to go anywhere. Best of references. PW-900, Textile World, 330 West 42d St., New York City.

PHILADELPHIA Textile School (three-year course) graduate, ambitious, strong, handy with tools, desires position. Willing to do anything, go anywhere. Salary at start no object. PW-897, Textile World, 330 West 42d St., New York City.

POSITION wanted by experienced boss dyer, bleacher and mercerizer on warp and skein yarn. PW-861, Textile World, 330 West 42d St., New York City.

RAYON and cotton skein dyer wants position either as dyer or assistant. Familiar and experienced with all yarns and dyes, perfect matches, fine winding. Will travel anywhere. PW-889, Textile World, 520 No. Michigan Ave., Chicago, Ill.

TEXTILE SCHOOL GRADUATE. Thorough technical and practical knowledge of European and American mills. Graduated in Austria, Germany and America 1896. Long experience in development work—weaving, testing, designing and analyzing every cloth made. Practical knowledge from yarn to finished goods. Will accept any available position—as weaver if necessary. PW-888, Textile World, 330 West 42d St., New York City.

SITUATION wanted by silk throwster, 18 years superintendent of largest throwing mill. Hosiery Trams a specialty. PW-892, Textile World, 330 West 42d St., New York City.

POSITION WANTED

YARN SALESMAN

Thoroughly acquainted raw and thrown silk, rayon, cotton, worsted, desires connection with importer or dealer.

PW-903, Textile World
330 West 42d Street, New York City

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FOR manufacture on Royalty Patterns, drawings, patented fibre processing machine, selling $1,000 up, big profit, market for 50,000 in cotton, woolen, worsted, shoddy, felt, asbestos, batting and mattress mills. No competition. Locate anywhere. Textile Engineer, 11 Allston Street, Boston, Mass.

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For particulars write to

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Good Used Equipment, Some Practically New!
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DYEING, DRYING and FINISHING

1—36-in. Sargent 4-bowl Scouring machine.
1—1000 lb. Klauder Weldon Raw Stock Dyeing Machine.
2—48-in. Tolhurst copper basket Extractors.
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1—500 lb. Franklin Process Stock Dyeing machine.
1—50 lb. Franklin Process Jack Spool Dyeing machine.
3—500 lb. Franklin Process Jack Spool Dyeing machines.
2—72-in. Hunter 5-section Stock Dryers.
1—60-in. C&M Vacuum Extractor.
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2—66-in. C&M Single Plush Shears.
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1—66-in. C&M Hummer.
1—72-in. Butterworth 45-ft. Pin Tenter Frame.
1—66-in. David Gessner Heavy Cloth Press.
1—60-in. Cavagnaro 3-roll Embossing machine.
1—66-in. P&W 3-cylinder Brusher.
2—20 sp. Universal Franklin Process Tube Winders.
2—500 lb. Franklin Process 60 spindle Package Dyeing Machines.

Complete Saco Lowell Spinning Unit

We offer a 3600 spindle spinning unit newly installed 1919-20. Spinners have 2¼ in. rings—3½ in. gauge, tape drive, McMullen heavy spindles.

1—Grinnell Tray Dryer for Franklin Packages, 14 trays equipped with temperature controls.
1—Hurricane single truck Yarn Dryer equipped with temperature control.
1—Philadelphia 2-truck Yarn Dryer with 5 trucks.
1—66-in. Hurricane Loop Dryer with Carrier Air Conditioner and temperature control.
1—82-in. Kenyon 120-yd. return tenter dryer.

LOOMS

46—64-in. C&K 2x1 Silk Looms, motor driven.
11—64-in. C&K 4x4 Silk Looms, motor driven.
50—82-in. C&K 4x4 Looms, 25 harness, motor driven.

KNITTERS

20—3½-in. S&W K 220 N. Knitters.
50—3½-in. S&W K 240 N. Knitters.
48—3¾-in. S&W K 240 N. Knitters.
39—3⅞-in. S&W K 260 N. Knitters.
1—16-in. S&W 14 cut Knitter.
1—17-in. S&W 14 cut Knitter.
1—19-in. S&W 10 cut 8 feed Knitter.
1—19-in. S&W 12 cut 8 feed Knitter.
8—20-in. S&W 10 cut 8 feed Knitters.
1—20-in. S&W 9 cut 8 feed Knitter.
1—20-in. S&W 12 cut 8 feed Knitter.
5—20-in. S&W 14 cut 8 feed Knitters.
19—15-in. to 20-in. Cooper 14 cut spring needle Knitters.

SILK THROWING EQUIPMENT

90—116 sp. Atwood Single Deck Spinners, 4-in. gauge.
30—100 sp. Atwood 5-B Spinners, 2 9/16-in. rings.
33—56 sp. Atwood Winders.
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NOVELTY TWISTERS

2—160 sp. D&F 2⅛-in. Ring.
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1—160 sp. F&J 2½-in. Ring.

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1—P&S 20-in. and 60-in. 2-cyl. Garnett with Blamire Lapper.
1—James Hunter 1920 — 30-in.x48-in. 4-cyl. Garnett.

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4—Saco Lowell 10 spdl. 12x6 Draw Boxes.
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1—Foster Tube Winder, 100 spdl., 1924.
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500—12 x 36 Seamless Fibre Roving Cans, metal bottom.

We specialize in Worsted Yarn Machinery.

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New and Used Equipment for Tompkins and Campbell and Clute Spring Needle Machinery

SMALL AND MEDIUM SIZE TABLES
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Re-conditioned Flat Steel Heddles and Frames

A full line of Flat Steel Heddles for weaving rayon, cotton, worsted and lenos. All heddles are properly sorted with uniform eyes and thickness of wire, put on rods, counted and interlaced.

By special arrangement these heddles have been cleaned, examined and reconditioned by **Steel Heddle Mfg. Co.** at their Philadelphia plant.

We have a stock of Iron **End Frames** to fit these heddles. **We invite your inquiries.**

Pawtucket Mill Supply Co.
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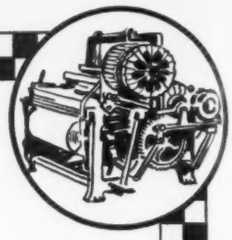

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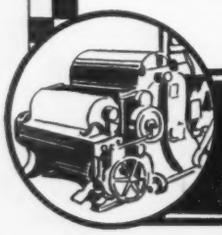

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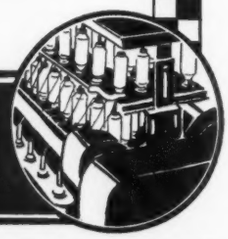

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1—Payne 36 Sp. Skein Winder.
1—Stafford & Holt, 26 in., 14 Cut, 6 feed Jersey Striper, Crawford S. M.
1—Brinton 20-in. Ribber.

FS-904, Textile World
330 West 42d Street, New York City

For Additional "For Sale" Advertisement see page 177.

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CARDING

H—64—40", 27" Saco-Pettee R.F. Cards.
H—40—40", 27" Saco-Pettee R.F. Cards.
H— 8—40", 27" Whitin Co. R. F. Cards.
H—72—40", 27" Saco-Pettee R.F. Cards.
H—68—40", 27" Saco-Pettee R. F. Cards.
H—40—40", 27" Whitin Co. R. F. Cards.
H—28—40", 27" Platt Bros. R. F. Cards.
B— 7—Saco-Pettee Card Coilers, 12".

DRAWING

B— 1—Frame Saco-Pettee, 1911, Drawing, 2 heads, 6 dels., each, leather rolls, 12" coilers.
B— 1—Frame Saco-Pettee, 1911, and Saco-Lowell, 1922, 2 heads, 6 dels. each, leather rolls, 12" coilers.
B— 1—Frame Saco-Lowell, 1913, 2 heads, 6 dels. each, leather rolls, 10" coilers.
B— 1—Frame Saco-Lowell, 1922, and Saco-Lowell, 1919, 2 heads, 6 dels. each, 10" coilers.
H— 4—Up Saco-Pettee Drawing, 5 per frame.
H— 4—Up Saco-Pettee Drawing, 5 per frame.
H— 4—Up Saco-Pettee Drawing, 4 per frame.
H— 8—Up Saco-Pettee Drawing, 4 per frame.
H—29—Up Saco-Pettee Drawing, 4 per frame.
S—36—Deliveries H & B Drawing, leather rolls.
Note: All Drawing equipped with metallic rolls.

COMBING

H— 2—9¾" Lap. Whitin Co. Silver Lap Machine.
H— 2—11¾" Lap. Whitin Co. Ribbon Lap Machine.
H—12—D-3 12" Coilers Whitin Co.
Combers with electric stop motion and Roth Aspirators.

SLUBBERS

J—2—Whitin slubbers—12x6x72 spindles, Nos. 3129 and 3128, 10" space, 1¼"x1"x1", 1918, 144 spindles

INTERMEDIATES

J—4—Whitin Intermediates, 9x4½"x114 spindles, 7" space, Nos. 3107, 3108, 3109 and 3110, 1918, 456 spindles.
J—2—76-sp. ea. Saco-Pettee Intermediates, 10x5, 120 sp. ea.
J—9—108-10"x5" Woonsocket Intermediates.
J—6—108-10"x5" Saco-Pettee Intermediates.
J—3—108-10"x5" Saco-Pettee Intermediates.
J—12—108-10"x5" Saco-Pettee Intermediates.
J—24—108-10"x5" Saco-Pettee Intermediates.

SPINNING

J—10—Whitin spinning frames, 240 spindles each, 2¾" gauge, 1908 (2400 spindles).
J—18—Whitin Spinning Frames, 228 spindles, 3¼" gauge, 1¾" No. 1 Flange ring, tape drive, steel plate holders, rails bored for 2½" metal thread boards, roll 1"—⅞"x⅞" separators, 1920. (Excellent condition).

TYING-IN MACHINES

H—2—4—E—Barber-Colman Warp-tying Machines, Serial No. S, No. 363, No. 366.

LOOMS

54" E Model Draper Looms.

Quan.	H. Tops	Selv. Mo.	Stop Mo.	Feel	Cams	Description
132	Lacy	Yes	2 bank	No	14	Sateen

43" E Model, Draper Looms.

110	Dwight	Yes	2 bank	No	1x1	Plain
74	Dwight	Yes	2 bank	Yes	1x1	Plain
73	Lacey	Yes	2 bank	No	1x1	Plain
20	Lacey	Yes	4 bank	No	1x1	Plain

B—62—C & K 43½" Reed Space, 4x1 box, 20 harn. dobby, auto, motor dr.
B—29—C & K 40½" Reed Space, 4x1 box, 20 harn. dobby, auto, belt dr.
B—119—C & K 52½" Reed Space, 4x1 box, 20 harn. dobby, non auto., belt drive.
B—40—C & K 52½" Reed Space, 6x1 box, 20 harn. dobby, non auto., belt drive.
B—1—C & K 56½" Reed Space, 4x1 box, 20 Jacq., auto., motor drive.

161 DEVONSHIRE ST.
BOSTON
Liberty 5948

WORSTED

CARDS

F— 2—60" James Smith Co. Worsted Cards.
F— 4—60" Smith & Furbush Worsted Cards, with iron cylinders.
F—13—60" M. A. Furbush Worsted Cards.
F— 6—60" Bridesburg Worsted Cards.
F— 2—60" Taylor Wadsworth Worsted Cards.
F— 6—54" Platt Worsted Cards.

GILL BOXES

F— 3—Hall & Stells single ball Gill Boxes (1 dead weight).
F— 1—Prince Smith single baller Gill Boxes.
F— 1—Saco-Lowell double baller Gill Boxes.
F— 3—Lowell double baller Gill Boxes.
F—17—Hall & Stells double can Gill Boxes.
F— 8—Lowell.
F— 5—Prince Smith single can Gill Boxes.
F— 1—Taylor Wadsworth single can Gill Boxes.
F—18—Prince Smith double can Gill Boxes.
F— 3—Ramsden double can Gill Boxes.

DRAWING BOXES

F— 7—Hall & Stells 4-spindle Drawing Boxes, 14x9 bobbin.
F— 6—Saco-Lowell, 4-spindle Drawing Boxes, 14x9 bobbin.
F— 3—Hall & Stells 6-spindle Drawing Boxes, 10x6 bobbin.
F—12—Prince Smith 8-creel for 30 bobbins, 12x6 bobbin.

REDUCERS

F— 3—Prince Smith 24-spindle Reducers, 9x5 bobbin.
F— 4—Hall & Stells 24-spindle Reducers, 9x5 bobbin.

FLYER ROVERS

F—10—Prince Smith 32-spindle Flyer Rovers, 8"x4" bobbin.
F— 7—Saco-Lowell 36-spindle Flyer Rovers, 7"x4" bobbin.
F— 7—Saco-Lowell 36-spindle Flyer Rovers, 7"x3½" bobbin.
A— 4—Saco-Lowell 36-spindle Flyer Rovers, 7"x4" bobbin No. 2144, 5, 6, 7, 6" pitch, 14" ratch.

RING ROVERS

F—13—Prince Smith 30 spindle Ring Rovers, 6"x3½".
F— 7—Hall & Stells 32 spindle Ring Rovers, 6"x3½".
F— 3—Prince Smith 32 spindle Ring Rovers, 6"x3½".
F— 4—Hall & Stells 48 spindle Ring Rovers, 6"x3½".

CAP SPINNING

F—37—Prince Smith 200-spindle Cap Spinning Frames, 3½" pitch.
F—18—Saco-Lowell 200-spindle Cap Spinning Frames, 3½" pitch.
F—42—Prince Smith 200-spindle Cap Spinning Frames, 3⅜" pitch.

FLYER SPINNING

F— 6—Hall & Stells 200-spindle Flyer Spinning Frames, 2"x4".
F—4—Prince Smith 200-spindle Flyer Spinning Frames, 2"x4" with automatic doffers.

RING TWISTING FRAMES

F— 7—Saco-Lowell 200-spindle Ring Twisters, 4" ply.

CAP TWISTING FRAMES

F— 6—Prince Smith 200-spindle Cap Twisters, 3½" pitch.
A— 3—Hall & Stells 192-spindle Cap Twisters, 2¼" caps, 4½" traverse.

BALLING MACHINES

F— 6—North Chelmsford 16-spindle Balling Machines.

Write, Wire or Telephone

H. M. McCORD

100 EAST 42nd STREET
NEW YORK CITY
Ashland 4-0345
Mr. W. G. Pattison, Charlotte, N. C.
Tel. 2-0264

FINISHING, PRINTING & DYEING

J—6—Hussong Skein Dyeing Machines, 300 to 400 lbs. each for skein dyeing. Wooden tubs, 4' x 10' x 42" deep, complete with one motor for each set of 3 tubs, complete with overhead track and air hoist. Air compressor tank with Smith and Drum single-cylinder air compressor, automatic pressure gauge. Driven by individual motor, Whitney Chain drive. Electric current, 220-volt, 60-cy., complete with switches.

J—2—Tolhurst Extractors, 48", belt drive, No. 3420, 700-r.p.m. arranged for belt drive direct to 7½-hp., 220-volt, 60-cy., 3-ph., 720-r.p.m. Westinghouse motors, complete with switches and rheostat.

J—2—Allen boiling out Kiers, 3500 lb. capacity with superheater motor. Motor driven pumps and chain hoists used for boiling out skeins.

J—1—Continuous Philadelphia Proctor Dryer, 8' 6" wide, 90' long with 3 fans, motor driven feeding end of chain on floor below.

J—1—Monel Metal Tub, 24"x 96"x 36" deep.

LI—P&S two-truck Skein Dryer, one fan, 4 swivel caster trucks, 11' wide, 13' deep, 9' high.

F—Hurricane Truck Dryer, 53' long, 10' wide, 12' high, temperature control in 3 zones, 8 fans (New).

A—Kenyon Pin Tenter Dryer.

N—72" Broadbent Bottom Drive Extractor, 550-V., 3-ph., 60-cy.

N—Giles 52", 20 Stick Monel Lined Skein Dyeing Machine.

N—Vincent, Roberts & Marr Yarn Dryer 89" 180 sticks, variable speed drive.

P—6—Smith Drum 8-compartment All Monel Hosiery Dyeing Machines.

S—1—50" Water Mangle, Folders and Scutcher

S—1—Butterworth Combination Water Starch Mangle.

CC—2—Scutchers—Textile.

CC—1—Textile 50" Back Filler (Tommy Dodd).

CC—1—Textile Dry Cans, 32—90" x 23" Copper.

CC—1—Textile Dry Cans, 32—142" x 23" Copper.

CC—1—50" Textile 6 Rol Calender—4 Comp., 2 Steel, equipped for chasing.

CC—1—50" Textile 3 Roll Calender, 2 Comp., 1 Steel.

CC—1—45" Textile 3 Roll Calender, 2 Comp. 1 Steel.

S—1—30 ft. 4 section Loop Dryer with Folder, 78".

S—1—Butterworth 78" 3 Roll Calender, 46" face.

B—1—Cloth Mercerizing Range, Butterworth, 1927, 2 Caustic Mixing Tanks with necessary circulating pumps.

B—3—Dye Jigs (Butterworth) 1927, Wood Box, 49x32, 43" Rubber rolls

B—1—Vertical Set Dry Cans, 23x144", Textile Finishing Machine Co. Folder.

B—8—Dye Becks, motor driven, 550 volt, 3 phase, 60 cycle, all in extra good condition —2—8x4 ft., balance 8x10 ft.

B—3—Van Vlaanderen serial 652-3-4 Motor 1½HP.

B—3—Van Vlaanderen serial 648-9-50 Motor 1 HP. (648 no motor).

B—1—Van Vlaanderen Motor ¾ HP.

B—1—Morrison C. W. Motor 1 HP., size 15 P.

COMMERCIAL TRUST BLDG.
PHILADELPHIA
Rittenhouse 2185

PROVIDENCE, R. I.

Buy —H. LEACH— *Sell*

295 Dyer St.

This Month's Special

1—Worthington size 17x16 feather valve air compressor and tank, in wonderful condition, was running until a short time ago and is still hooked up in the mill. Will sacrifice for quick sale as it must be moved at once.

We Are Looking for

4—General Electric 25 hp., 550 volts, 3 phase, 60 cycles, Type BTA Motors. Advise us at once full particulars.

FOR SALE

Universal No. 50 Silk Coners.
12—No. 90 Universal Coppers, with bunch builders. Silk.
Universal No. 90 Coppers.
Silk Winders, all types.
Bottle Bobbin Winders, Allen, Lever, Altemus, Payne.
1—3FA Hoffman Press.
Loopers.
1—S. & W. Knitter, 20-in., 8 cut deep cuff welt.
Payne Bottle Bobbins.
Motors, 2 and 3 ph.
60 spdl. Foster, Model 12.
Wildman Cylinders and Dials, 8 cut.
Sewing Machines, all types.
Unit B3-B5-B7 S. & W. Knitters.
16—Universals for F. F. Hosiery.
4—88 spdl. Atwood Spinners.
2—100 spdl. Scranton Spinners.
4—64 spdl. Atwood Silk Winders.
S. & W. Knitters, 14-in. to 20-in.—12 cut.
S. & W. Knitter, 15, 16, 18, 19-in.—14 cut.

Ambler Textile Machinery Co.

Bodine and York Streets, Philadelphia, Pa.

FOR SALE

6—S. & W. 19 in. Mchs., 12 cut, 8 feeds.
3—Wildman 18 in. Mchs., 10 and 11 cut, vibrating dogs, 16-end Wildman stopmotions.
5—Universal No. 50 Cotton Winders.
4—Universal No. 50 Silk Coners, 6 spindle.
1—Smith Drum, 50 lb. Dyeing Machine (paddle type) monel metal lined.
15—Scott & Williams K's, 3½ in., 240 n.
50—Banner Stripers, 2¾ in., 3 in., 3¼ in., 3½ in.
50—Wildman Ribber Stripers, 2¾ in., 3 in., 3¼ in., 3½ in., 3¾ in., 4 in., 4½ in., 4¾ in.
14—Banner 6 step Machines (Acme Attachments).
30—Scott & Williams B-3 Footers, 2½ in., 2¾ in., 3 in., 3¼ in., 3½ in.
50—Wright Steady Dial Loopers, 8, 12, 14, 16, 18, 20, 22, 24 and 26 points per inch.
6—Sotco Loopers, 22 and 24 points.
25—Merrow Machines, Style 60-S and 60-UD.
800—Wildman and Brinton Ribbers, all sizes.

JAMES SLAYBAUGH

5416 Lena Street, Germantown, Philadelphia, Pa.

FOR SALE

1—Foster No. 101 High Speed Winder, 96 spindles, equipped for either wooden cones or paper tubes.

2—Saco Lowell High Speed Warpers, with Magazine Creels.

A. F. FYANS

7 No. Main Street

FALL RIVER, MASS.

Telephones 7545-7546

FOR SALE

8—18 Spd. Oswald Lever BB Winders, for paper bottles.
3—48 Spindle Easton & Burnham Winders.
38—No. 50 Universal Tubers & Coners.
3—80 Spd. Atwood 3F Silk Winders.
2—100 Spd. Eastwood Silk Winders.
1—70 Spd. Sipp Winder.
1—Ideal Air Brush.
3—Morrison Thread Dressers (Single Brush).

C. I. GINSBERG

153 West 21st St., New York City

LIQUIDATION SALE OF

S. ROSENAU COMPANY

Darien and Noble Streets, Philadelphia, Pa.

PLANT CONSISTS OF

1200 New England-Butt make Braiders—sizes 12-16 and 24 carrier.
2500 Braiding machines, German make—all sizes, all types.
1—Proctor & Schwartz Dry Room — 2 truck.
1—Fletcher Extractor, with motor drive, 26-in. basket.
48—Schaum & Uhlinger and Insinger narrow fabric and trimming Looms, for belts, suspender webs, ribbons, other fancy articles.
German Braiding Machines in all sizes, all types, uses; thousands of them.
Silk, Rayon, Cotton, Winding Machines.
34—Eppler Knitting Machines. Upright Knitters.
Frill making machines.
Pedaline, and Guimp Machines.
Complete Machine Shop, tons of Belting, Shafting, Pulleys, Hangers, Motors, etc.
Raw Materials, in case lots.
Office Furniture.
Proctor & Schwartz Drying Room for two trucks.
3—Dye Tubs.
1—Extractor, 26-in. Basket.
500,000 Bobbins, Spools, etc.
Cellophane Cutting Machines.
150—Radium Braiding Machines, all sizes.
Roving Cans.
Misc.—Loaders, Hangers, Shaftings and Machine Shop.
6 Floors, or 102,000 sq.ft. of Machinery. You may purchase any quantity—to suit yourself, from one machine up.

Plant being liquidated by Robert Solomon, Inc., Dealers in Textile Machinery

S. ROSENAU COMPANY

DARIEN AND NOBLE STREETS, PHILADELPHIA, PA.

THROWING PLANT

8000 Twister Spindles.
1000 5-B. Spindles.
2200 Winder Spindles.
600 Drawside Spindles.
240 Copping Spindles.
40 Cooper-Hewitt Mercury Lamps.
Bobbins and Supplies, etc., etc.

NATIONAL SILK THROWING CO.

80 Dale Ave., Paterson, N. J.

FOR SALE

DYEING MACHINES

2—Morton Beam, complete with Pump and Air Compressor. These machines in first class condition.

Cocker Machine & Foundry Company

Gastonia, N. C.

WANTED

BOBBINS and SPOOLS

We buy and sell new and used textile accessories; butts, shuttles, skeiners, etc. Send samples.

JOHN LOTZ

6316 N. 13th St., Philadelphia, Pa.

WANTED

DRAPER LOOMS

20—42-in. Modified D Model, in good condition, for Flat Duck. Name lowest cash price and where can be inspected.

W-901, Textile World
330 West 42d Street, New York City

Wanted to Buy for Export

Complete knitting, finishing and sewing equipment for cotton underwear mill. Your reply must contain complete specifications.

W-895, Textile World
330 West 42d Street, New York City

WANTED

USED MACHINERY
SKEIN DYEING
CONTINUOUS
PIECE GOODS DRYER

TORONTO DYEING & FINISHING WORKS

356 Dufferin St., Toronto 3, Canada

LOOMS WANTED

100 to 200 Automatic 4x1 Box 20 to 25 harness dobby looms for 40 to 44-in. fabric. Looms to equal Crompton & Knowles Cotton King Loom. Give full specifications and description when offering looms.

W-883, Textile World
330 West 42d Street, New York City

LOOMS WANTED

100 to 200 Automatic 20 to 25 harness dobby looms for 40 to 44-in. cloth, looms to be equivalent to Draper Modified D Looms. Give full description and specifications when offering looms.

W-884 Textile World
330 West 42d Street, New York City

WANTED

BRAIDERS

64 Tubular; 65 Flat; 81 Flat.

W-890, Textile World
330 West 42d Street, New York City

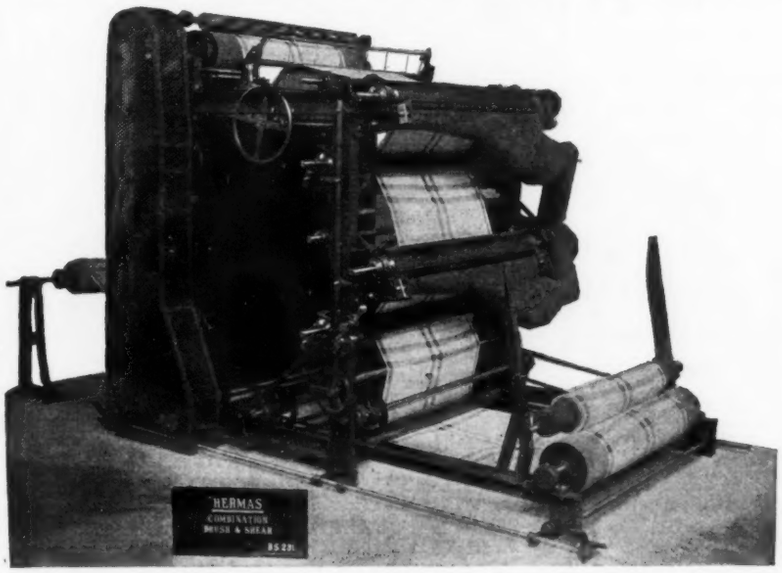
WANTED

Curtis & Marble Reversible Flock Cutters

W-885, Textile World
330 West 42d Street, New York City

HERMAS

COMBINATION BRUSH AND SHEAR



Fully automatic. Removes all strings, leaf, motes, trash, etc., from both sides and selvages at one pass at high speed. Brushes instantly adjustable for heavy or light brushing, or no brushing at all. Any combination or number of brushes or knives. Occupies only 50% of floor space formerly required. Reduces trimming, cleaning, burling and inspecting costs to the absolute minimum.

Hermas Machine Company, Hawthorne, N. J.
Southern Representatives: Carolina Specialty Co., Charlotte, N. C.

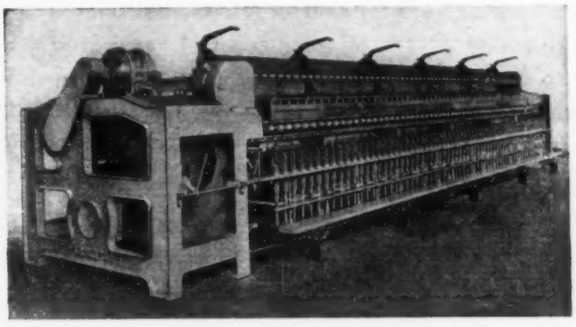
BABBITT
LOOM CRANKSHAFTS

WOOLEN SPINNING
Mules *and* Frames

The Davis & Furber Machine Company builds both Mules and Frames and is in a unique position to give unprejudiced advice as to which of these types is best suited to any particular mill. One hundred years' experience in making Carding and Spinning Machinery for the best mills insures good advice to those interested.

Our new Ring Spinning Frame with stationary ring rail and movable spindle rail embodies all of the improvements which recent experience has shown to be advisable.

Bring your spinning problems to us. Send us your roving. Come yourself and see it spun.



Ring Spinning Frame (Model B)

DAVIS and FURBER MACHINE COMPANY
North Andover, Mass.

WHY NOT KNOW WHAT IS NEW?

New products . . . new methods . . . new machinery will be vital factors of success in busier times ahead. In drying, carding, garnetting, and related processing, there have been revolutionary new developments by Proctor engineers.

• DRYERS •

Through months of curtailed manufacturing, Proctor engineers have redoubled their research, and developed some radically new and better ways of handling a variety of materials through drying processes. For example, a new Proctor Air Dryer is handling cotton warps in sheet form direct from the mercerizing machine, with wonderful benefits to quality . . . an entirely new Proctor Dryer for dyed and finished piece goods offers long-wanted advantages . . . improved Proctor machines for all other textile drying.

• CARDS •

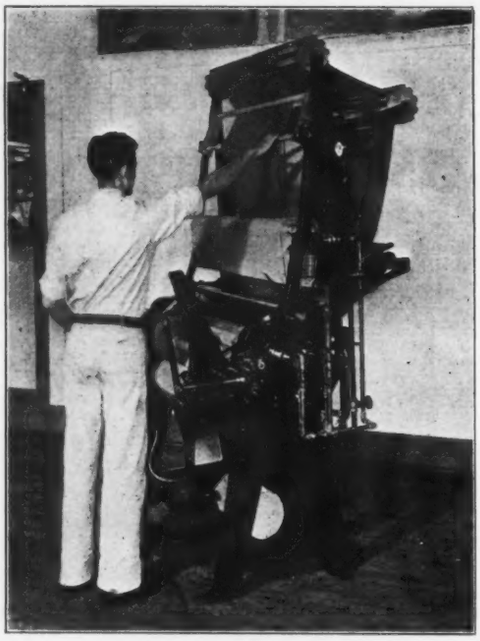
For French System worsted mills, there's a new Proctor system of carding that puts worsted waste back into worsted yarn at a big saving over the former practice of reworking it only into woolen yarn. A new Proctor burring machine works vast improvement . . . new metallic cards, breaker feeds, intermediate feeds and tape condensers show benefits to quality and huge savings. There are new improvements, too, in Proctor Cards for all woolen system carding work.

• GARNETTS •

The "Duplex" arrangement of garnett machines is a new development by Proctor engineers that has proved a short cut to production and a boon to quality in a number of shoddy plants. Then, too, there's the new Proctor Double Doffer Garnett for batt and felt work that excels in high capacity, quality of output, and low production cost.

Why not know these new Proctor machines . . . how they would improve your plant, and how much you could save by using them? Write . . . we'll gladly acquaint you.

PROCTOR & SCHWARTZ, INC
PHILADELPHIA



GENERAL UPRIGHT FINISHER

This MODERN FINISHER

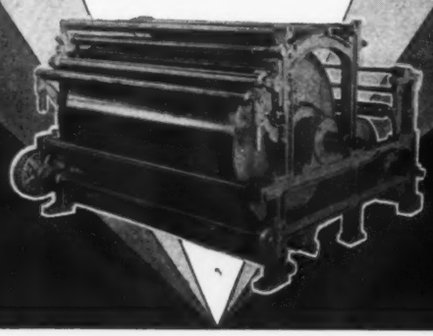
ELIMINATES the BOW CAUSED by "FABRIC SAG." GIVES FULL CONTROL of FABRIC so IT CAN BE WORKED with the HANDS to CORRECT ANY DISTORTION.

GRAND RAPIDS TEXTILE MACH. CO.
GRAND RAPIDS, MICH.

PALMERS

General Palmers will produce a superior finish *without any additional cost for an extra operation.* They can be easily attached to any of your present tenters. Are easily heated with small amount of steam. Have been consistently reordered by many of America's leading processors. Write for complete details—no obligation.

GENERAL MACHINE CO., Inc.
Agers, Dye Jigs, Dye Becks, Button Breakers, Re-rollers, etc.
189 Caldwell Ave.
Paterson, N. J.



A Real Step Forward in the Art of Rayon Weaving!

Due to the construction of rayon threads they are much more susceptible to jagging, chaffing, and reed marks than cotton and silk threads. Because of this peculiarity the flat reed wire has a serious disadvantage.

As the warp thread enters and leaves the reed at a very slight angle, the pressure of the thread comes in contact with approximately 98 per cent of the flat wire surface.

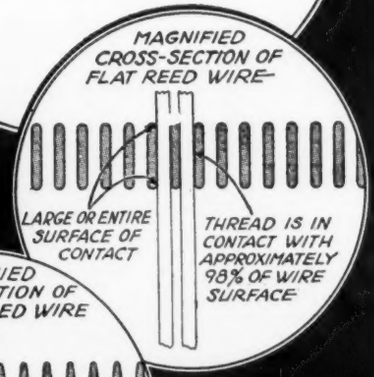
Accordingly, Steel Heddle Engineers set about developing a rayon reed that would eliminate this disadvantage. The result of their efforts is the—

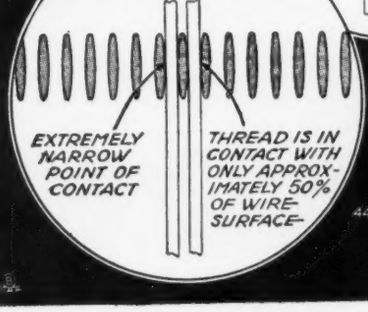
OVAL REED WIRE

The advantages of this construction can easily be seen in the sketch.

The point of pressure is taken away from the edge and is concentrated at a small point in the center of the face of the wire, due to the wire being oval. The thread is in contact with only approximately 50 per cent of the oval wire surface.

Made in both Pitch Band and Soldered types.


MAGNIFIED CROSS-SECTION OF FLAT REED WIRE
LARGE OR ENTIRE SURFACE OF CONTACT
THREAD IS IN CONTACT WITH APPROXIMATELY 98% OF WIRE SURFACE

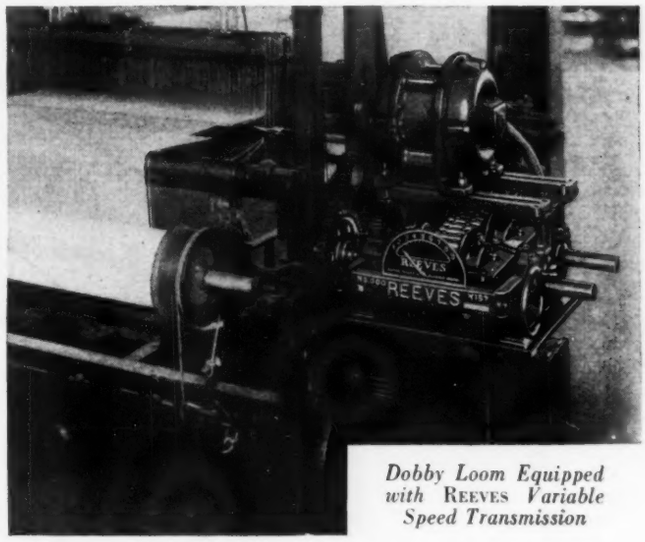

MAGNIFIED CROSS SECTION OF NEW OVAL REED WIRE
EXTREMELY NARROW POINT OF CONTACT
THREAD IS IN CONTACT WITH ONLY APPROXIMATELY 50% OF WIRE SURFACE

Steel Heddle Mfg. Co.

MAIN OFFICE AND PLANT
2100 W. ALLEGHENY AVE.
PHILADELPHIA, PA.
SOUTHERN PLANT
STEEL HEDDLE BUILDING
621 E. McBEE AVE.
GREENVILLE, S. C.
NEW ENGLAND OFFICE
44 FRANKLIN ST., PROVIDENCE, R. I.
FOREIGN OFFICES
HUDDERSFIELD, ENG.
SHANGHAI, CHINA

VARIABLE SPEED

by REEVES Makes a Dobby Loom Do More Work—Speed Changes Effected Instantly Without Gear Changing



Dobby Loom Equipped with REEVES *Variable Speed Transmission*

● APPLICATION of REEVES variable speed to a dobby loom makes it possible to increase speed on patterns requiring a small number of harness or slow down for patterns using a large number of harness. It places at your finger tips all in-between speeds, in proportion to harness used, giving *maximum production* and *perfect weaving* on all patterns.

Speeds may be adjusted in a second, while loom is running merely by turning a convenient handwheel. If work is running poor because of inferior yarn, loom out of order, or bad weather conditions, the speed can be reduced slightly until these conditions are corrected, then again increased to maximum speed. . . . It not only increases production but improves quality of goods and *saves time.* No gear changing—just turn handwheel for perfect speed regulation.

For over 35 years, REEVES has been the textile industry's most widely used variable speed unit. Complete range of sizes, designs and speed ranges—as great as 16 to 1—with any type of control desired, including automatic control for synchronizing machines in series. Quickly and economically installed on any machine in your plant. Let us tell you how you can profit by REEVES variable speed control.

REEVES

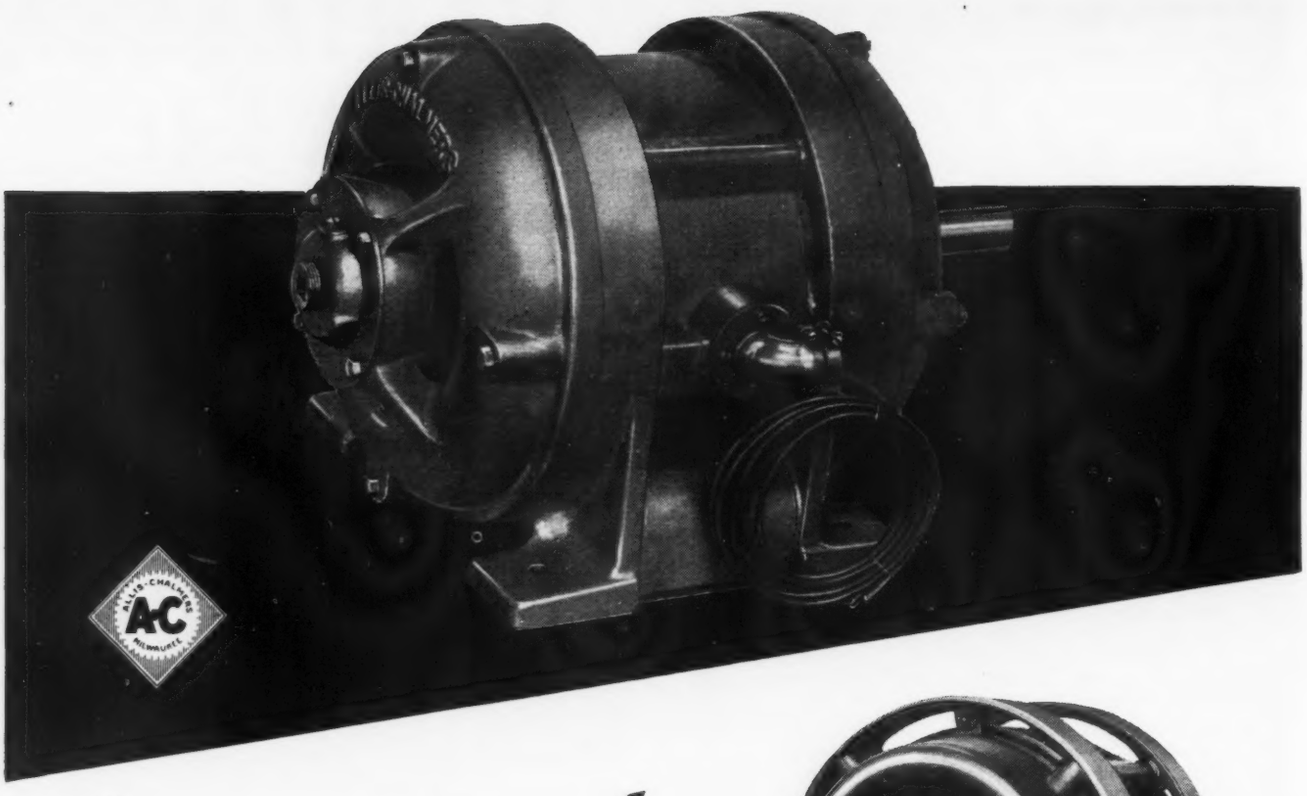
Variable Speed Transmission

REEVES PULLEY COMPANY, COLUMBUS, INDIANA

Without obligation, please send us Catalog W-99.

NAME..... COMPANY.....

ADDRESS.....



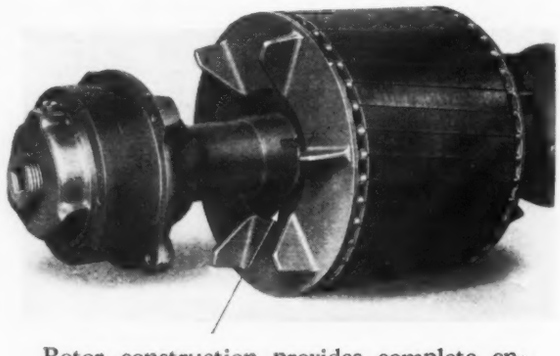
Seal-Clad

The stator windings are Seal-Clad, covered at both ends to provide a smooth, hard surface.

This new motor is specially designed for use in the textile industry. It is of the open type, Seal-Clad, and requires no screens or other devices for excluding lint or dust. Unobstructed air passages and smooth surfaces of all parts in the air paths permit free travel of lint or dust with the ventilating air.

The stator windings are covered at both ends, providing a smooth hard surface to which lint will not adhere. The integrally cast rotor fans are so shaped as to eliminate pockets where fly could collect. Discharge openings for the cooling air are large and smooth leaving no sharp edges. Motor housings have unrestricted inlet openings with smooth interior surfaces free from irregularities that would provide lodgment for fly.

In addition this new design provides for cartridge type ball bearings, waste packed, or ring oiling type, long leads for flexible conduit, and straight or tapered shaft extension.



Rotor construction provides complete enclosure which prevents the entrance of lint or dust in the rotating element.

ALLIS-CHALMERS

Allis-Chalmers Manufacturing Company, Milwaukee

STANDARDIZE ON LUNKENHEIMER

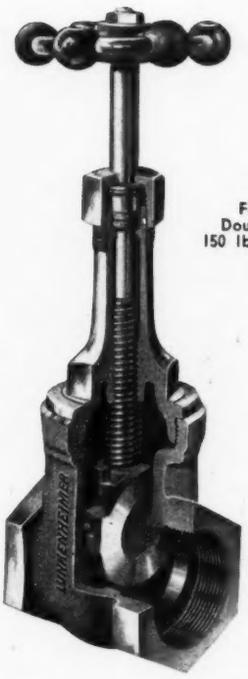


Fig. 427
Double Disc
150 lb. W. S. P.

Fig. 768
Wedge Disc
200 lb. W. S. P.

Figs. 427 and 768
BRONZE
Gate Valves

Well and favorably known in industrial plants all over the country, these valves fully justify the confidence placed in them. Their reputation for stamina and serviceability is the natural result of many years of satisfactory service under varied operating conditions.

Figs. 427 and 768 are made of a bronze composition developed particularly for valve service. Wall sections of extra thickness and large hexagons resist distortion. Proper seating of discs is insured by accurate alignment of moving parts.

BUY FROM THE LOCAL
LUNKENHEIMER DISTRIBUTOR

Descriptive Folder
F-550 sent on request.

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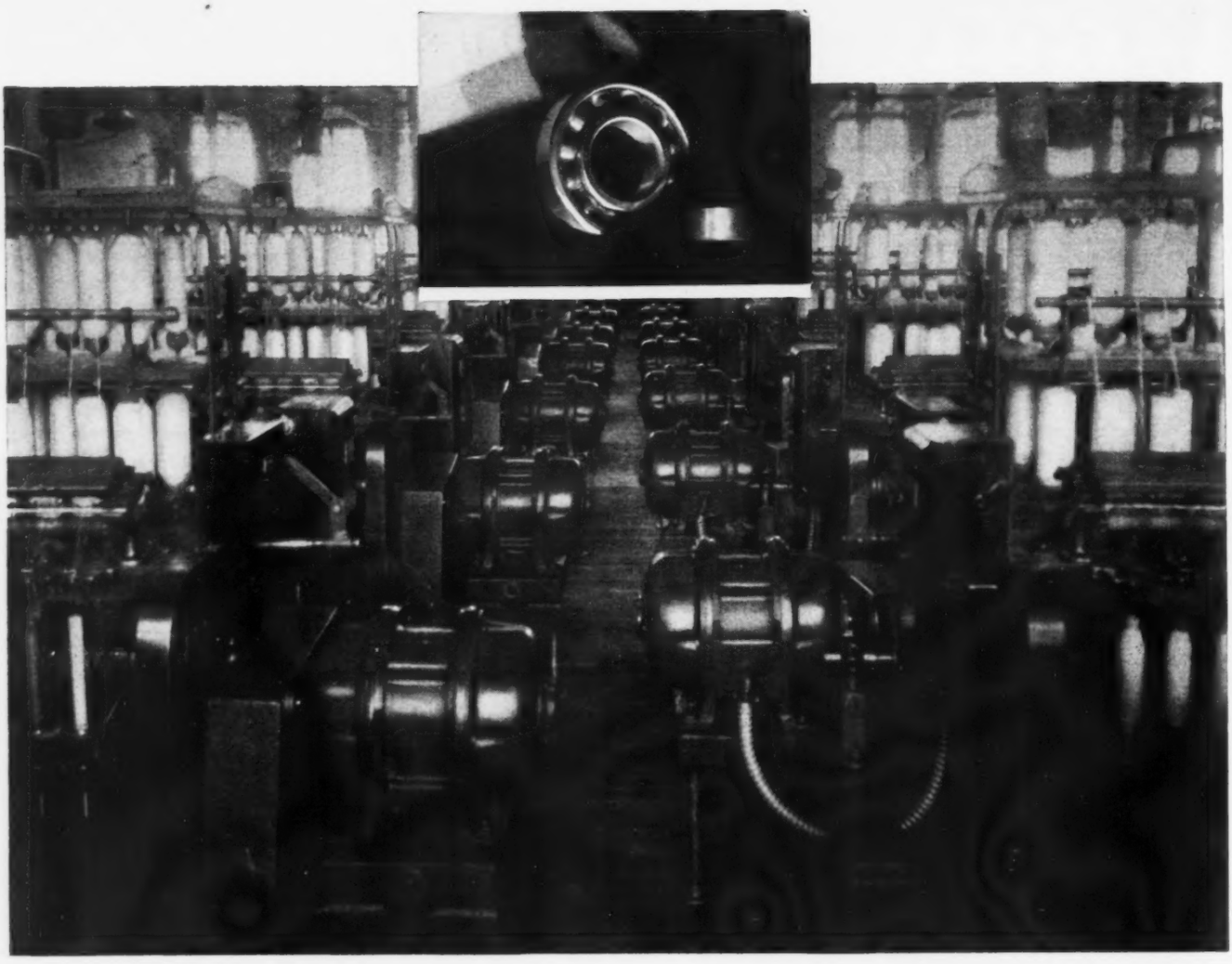

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Tens of thousands of electric motors are equipped with New Departure Ball Bearings. Nothing but savings could have won this acceptance. And if any industry needs their advantages more than textile, we have overlooked it. Here, a leaky motor is a fire hazard, a spoiler of materials, and a waster of good money. New Departures utilize grease as a lubricant; no leaks, no waste. They run a whole year between each lubricant charge, and there *is* a saving. Lint and dirt are kept out by leak-proof seals. New Departures possess the thrust capacity that vertical mountings need. And *you* need every penny that is rightfully yours. Stop the leaks. Specify New Departures on motor orders. All reputable builders will supply them. The New Departure Manufacturing Company, Bristol, Conn. Detroit, Chicago and San Francisco.

NEW DEPARTURE
BALL BEARINGS

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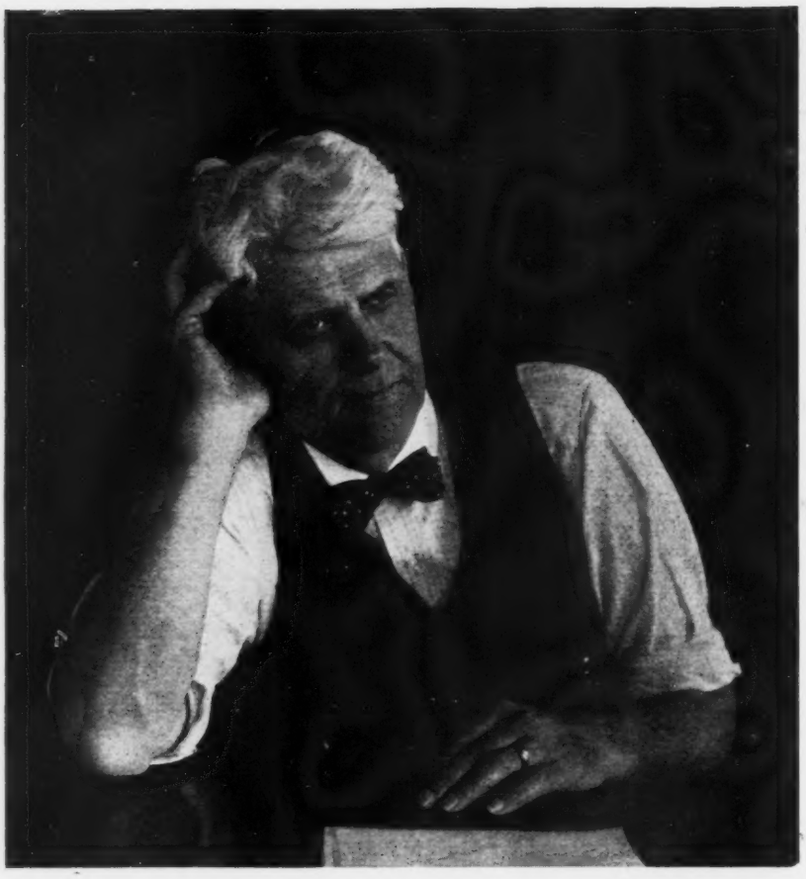


Scratching Your Head Won't Eliminate LOOM DANDRUFF

But there is a sure cure. The dandruff-like particles that settle around your looms are a definite sign of poor slashing. This shedding is costing you real money.

"Loom Dandruff" is caused by over or under cooking the size or by over drying the slashed yarn.

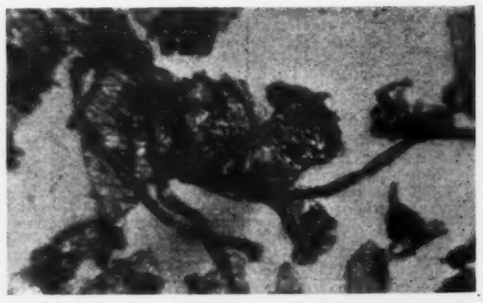
Look to your slashers! Engineered control is the cure.

Recent tests showed the following advantages of Foxboro Engineered Automatic Control over manual control.

Increased slasher speed	**15%**
Decreased steam consumption	**12%**
Actual production increase	**10%**
Warp Loom breakage decrease	**35%**

Here is an opportunity for a definite saving. At an extremely low cost we will give you Engineered Control of your slashers and guarantee savings.

We have an interesting folder, No. 612, which gives the results of actual tests on slasher operation. Write for it today.



"Loom Dandruff". Shedding from loom showing flaking-off caused by over cooking of starch granules (highly magnified).

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